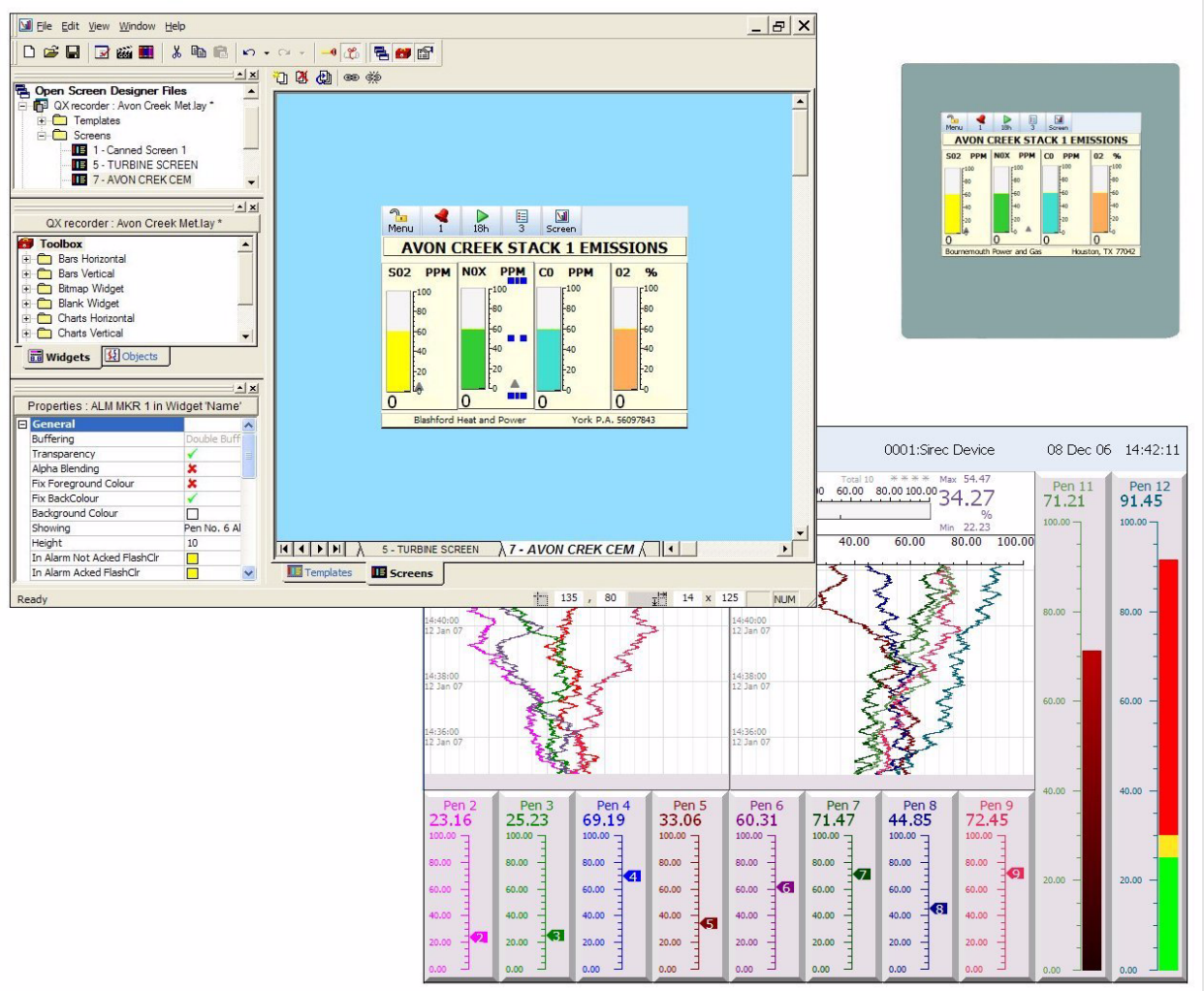
Honeywell Screen Designer - TrendView



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Protocols

Safety and Symbol Identification

Table 1.1 :

Symbol	Description
⚠ WARNING	The **WARNING** symbol indicates a potentially hazardous situation, which, if not avoided, **could result in death or serious injury.**
⚠ CAUTION	This **CAUTION** symbol may indicates a potentially hazardous situation, which, if not avoided, **may result in property damage.**
NOTICE	A **NOTICE** symbol indicates important information that must be remembered and aids in job performance.

Safety

NOTICE

Screen Designer for safety indication

When adding charts on custom screens whenever a pen value could be relied on for safety, a chart must be accompanied by one of the other indicators - pen pointer, bar or DPM.

This is to meet the safety standard's requirements to provide out-of-range indication.

Section 1: Preface

The **Minitrend** and **Multitrend** graphics recorders are the latest development in solid-state replacement for traditional paper recorders.

With many more options, features and functions available, these recorders are able to meet a wide range of applications and requirements including: Power, Water Treatment, Thermal Processing, Food and Beverage, Pharmaceutical/Biotech and Manufacturing industries.

This Manual

This manual explains how to use the **TrendView Screen Designer** software, which has been specially developed to create fully customisable screens for the **Minitrend** and **Multitrend** recorders.

The software is very intuitive and easy to use. There is design sequence to ensure a quick and easy design that involves an order in which layouts need to be created. It is highly recommended that the user reads the manual *before* using the software. This will familiarise the user with the **TrendView Screen Designer** user Interface, the terminology and tools used to create layouts and the rules of designing.

This manual provides information to the user about **TrendView Screen Designer** tools, commands and design techniques. It provides step by step instructions for using **TrendView Screen Designer** on Windows™. See *"System Requirements" on page 6.*

The **TrendView Screen Designer** software will auto run on installation from the CD or download from the web. Follow the instructions for *"Installation" on page 7*.

TrendView Screen Designer documentation and software assumes the user has working knowledge of Windows™ and its conventions.

The first step is to read the manual.

Supplementary documentation

Supplementary documentation to accompany these recorders are:

Table 1.1 : Supplementary documentation

Manual	Part number
X Series User Manual	**43-TV-25-30**
GR Series User Manual	**43-TV-25-41**
TrendManager Pro Software Suite Manual	**43-TV-25-11**

Notes

- The contents of this manual are correct at the time of issue. The contents may change at any time without prior notification. This is due to continuous developments to the recorder and its functionality.
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TrendView Screen Designer software overview

TrendView Screen Designer enables the user to design unique layouts for transfer on to a recorder.

Overview

Layouts, which represent the screens shown on a recorder, are designed by placing widgets and objects onto templates, which represent the recorder's screens. Widgets are graphical containers for objects; objects display elements that represent data in different graphical forms. Objects can be shown in a combination of display devices eg. Bargraph, Chart, Digital or combinations of these. Widgets and objects are placed on a template from which multiple screens can be created. The screens based on this template all look alike, but they can show different data. The completed design is then saved as a layout (.lay file), which can be loaded into the recorder.

The **TrendView Screen Designer** User Interface is easy to use and provides a user-friendly environment containing:

- **The Design window** - shows the area for creating layouts using templates and screens.
- **The File Browser window -** helps the user manage and navigate the open files
- **The Toolbox window -** contains the Standard widgets and objects the User can use the create templates and screens.
- **The Properties window -** shows the user all the characteristics associated with an object, widget, template or screen:

The **TrendView Screen Designer** software design package is compatible with both **Minitrend** and **Multitrend** recorders. Layouts can be transferred onto single or multiple recorders giving continuity and standardisation of process data.

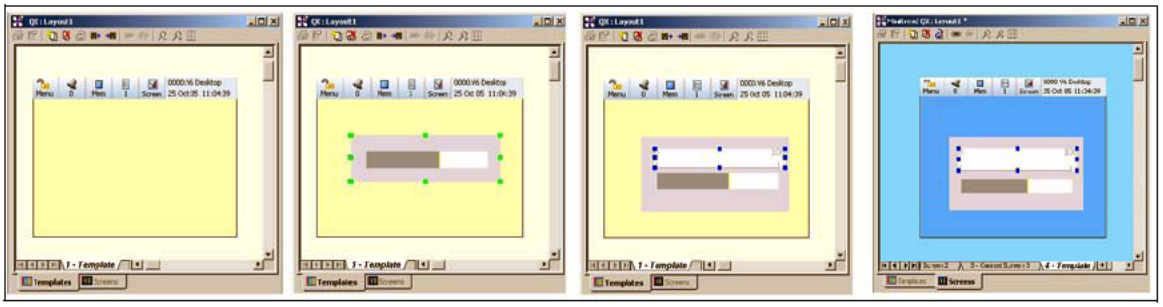
Why do you need TrendView Screen Designer?

TrendView Screen Designer has been developed to meet the ever increasing demand for instant information which is customised for efficient operator interpretation. This software tool enables the user to quickly develop totally customised screens displaying easy to read data.

How does it work?

The **TrendView Screen Designer** software is a familiar Windows™ based environment displaying information in separate window areas around the main design space. Toolbars, menus, drag and drop, undo/redo and left/right mouse click actions are used in the application interface.

The simple process of creating a layout is as follows:



Blank template

A Horizontal Bar widget added

Scale object added to the widget

Screen added from a template

- The user starts with a blank template. The template represents a screen (or screens) to be shown on the recorder.
- Select either a blank widget or a pre-defined widget from the widgets tab in the Toolbox window. Drag and drop the widget onto the template.
- If a blank widget is selected it will not contain any objects. Note that you can resize the blank widget or any of the pre-defined widgets. Select an object from the objects tab in the Toolbox window. Drag and drop an object from the Toolbox window onto the widget. Objects can be added to a blank widget or a pre-defined one. Objects display the data in various graphical forms, such as a Scale, Pen Pointer, Alarm Marker, Text, Bar or Digital etc.
- Each widget and object, when selected, has a detailed list of properties that can be extensively modified to suit the user's requirements. The properties are displayed in the Properties window. Green resize handles appear around a widget when it is selected and blue resize handles appear around an object when it is selected.
- Many objects can be placed onto a widget; many widgets can be placed onto a template.
- When the template is finished, a screen can be created from it. The screen can show the Pens, Alarms or Inputs/Outputs, as required. To do this, select the screens tab and select the Add Screens icon. Add the new screen based on the template. These are saved together as a layout (.lay file).
- The layout can then be loaded into the recorder via, Compact Flash card (for **X Series**), SD card (for **GR Series**) USB key, FTP interface or Network Share folder (NAS). Note that in order to load layouts into a recorder, the recorder must have the Custom Screens option active. Refer to the recorder's User manual for more details on firmware options.

Section 2: Introduction & Installation

TrendView Screen Designer is compatible with **Honeywell's TrendManager Software Suite** for the or **Minitrend** or **Multitrend** recorders

CD Contents

- **Screen Designer** Installation Setup
- **Screen Designer** Demos
- Documentation (Manual Pack)
- Recorder Firmware
- Recorder Installation Instructions

Learning about Screen Designer

Read this Manual

This user manual gives an overview of the **TrendView Screen Designer** Interface, details of the components within **Screen Designer** and easy step by step instructions on how to create new layouts.

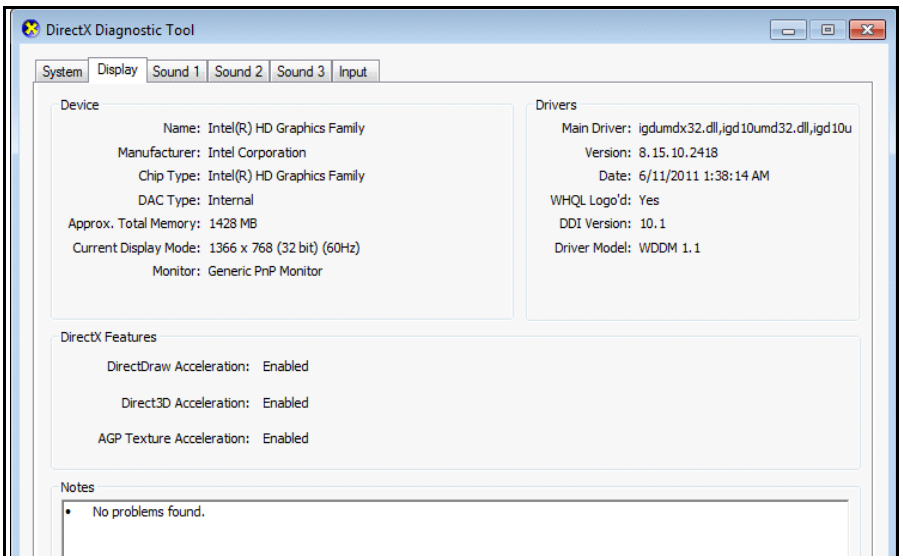
Take time to read through each section of the manual.

Start at the *"Installation" on page 7*, before loading on the software, then go to *"Section 3: TrendView Screen Designer Interface" on page 9*. Here you will find full explanations of each component in the **Screen Designer** interface.

Finally go to *"Section 4: Designing a Layout" on page 41*. This will describe how to design and build custom screens.

Pre-requisite requirement for installation of Screen Designer in PC

1. Graphic card is installed in PC and DirectX features is enabled



System Requirements

The system pre-requisites stated below are in line with the minimum required to run **Screen Designer** for the **TrendView** recorders.

- Monitor recommended screen resolution 1024 x 768mm (min), high colour Supports: Microsoft Windows™ XP, Windows™ 2003 server with Standard Edition, Windows™ Vista with Business and Ultimate Edition only and Windows 7 (32 bit – Professional and Ultimate Edition - 64 bit), Windows 2008 Server
- 4GB or more of RAM (min 4GB recommended)
- 2 Gbyte Hard-drive free disk space
- \CD - ROM drive, a Mouse
- Graphics Card & Direct-X control installed
- 16 bit colour graphics (24 bit recommended)
- Flash card reader or USB port for **X or GR Series** recorders

Recorder Requirements:

To transfer **Screen Designer** layouts onto the recorder, the credits for the Customs Screens firmware option is required for the recorder.

To use a recorder in Designer Mode, a USB mouse is required to be connected directly to the recorder (front or rear) and Designer Mode activated by clicking on the Screen button and then the Edit button in the recorder's Menu bar.

Another way to use the Designer Mode is via the Remote Viewer. The firmware option for the Remote Control Tool needs to be active in the recorder and Passwords must be enabled in the recorder. The user then needs to browse the recorder by entering the recorder's IP address into an Internet browser. The web page will be password protected and will have the Remote Viewer download button.

Installation

Before installing the software onto your PC, it is recommended to close down all other applications, including any programs that automatically load during your PC's start up procedure. Place the CD in the drive and the software should Auto Run. If this does not occur within 30 seconds follow the instructions below:

- place CD into drive
- go to 'My Computer'
- double-click CD ROM drive
- double-click **Screen Designer** icon
- Follow the installation instructions on the screen

During installation you will be asked to confirm the drive and directory into which you would like the software installed. The default drive and file path is C:\Program Files\TrendManager Suite\Screen Designer.

Note: Localization drop down will show the Asian languages supported based on variant selected.

Start up

Screen Designer

The **TrendView Screen Designer** software has been installed on the hard drive of your computer (C) in 'Program Files' unless during set up you change the destination folder.

To start the program go to the Start button at the bottom left of your screen and select Programs (or All Programs) and go to the **Trenview Recorders** folder. Place the cursor over the **Screen Designer** program and click.

Right click on this icon to create a shortcut that can be placed on the desktop for quick access.

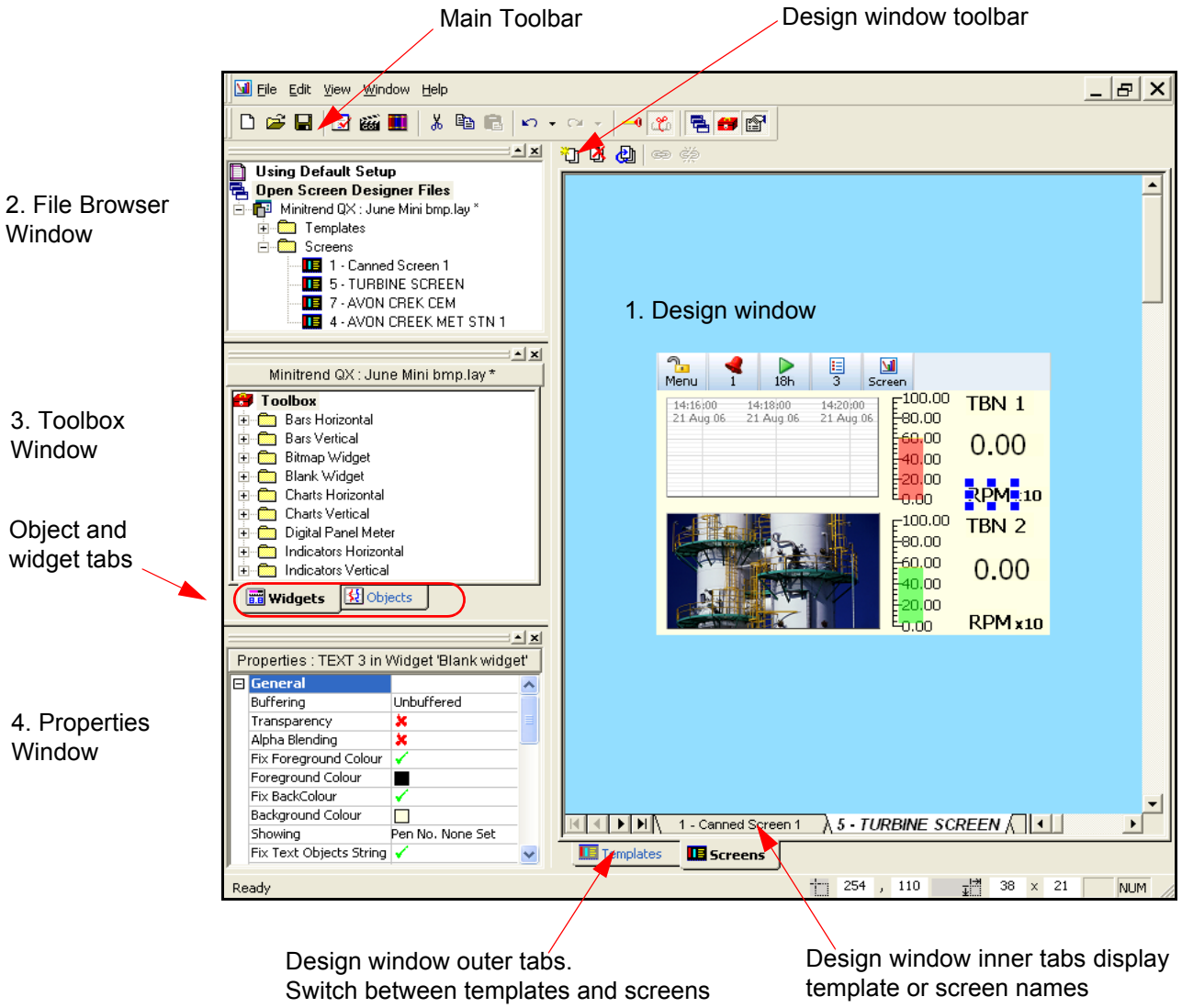
Section 3: TrendView Screen Designer Interface

TrendView Screen Designer Interface

The **TrendView Screen Designer** User Interface consists of:

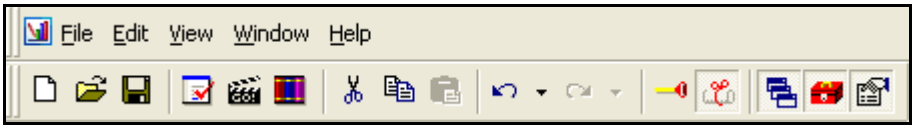
1. *"Design Window" on page 14* - Shows the contents of a layout and is the design area for creating templates and screens to produce layouts
2. *"File Browser Window" on page 16* - shows hierarchical structure of each open file eg. screens, templates, layout files.
3. *"Toolbox Window" on page 28* -2 tabs that contain widget and object libraries the user can "Drag and Drop" into an open template in the Design window
4. *"Properties Window" on page 24* - displays the characteristics of a selected item eg. widget, object, template or screen.

Figure 3.1 Screen Designer user interface


Main Toolbar
Design window toolbar
2. File Browser Window
3. Toolbox Window
Object and widget tabs
4. Properties Window
1. Design window
Design window outer tabs. Switch between templates and screens
Design window inner tabs display template or screen names

Main Toolbar

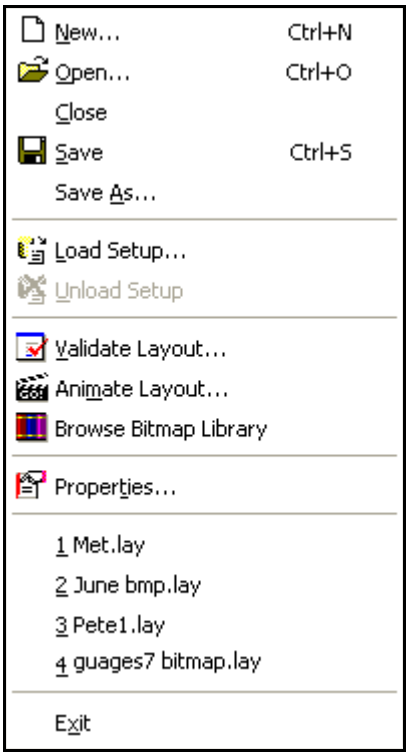
The Main Toolbar provides the user with the standard Windows user interface features including: **File, Edit, View, Window** and **Help**. No Help files are currently available for this version of **Screen Designer**.



Listed below are the items that appear in the Main Toolbar.

- **New** - a new blank template to create **Minitrend** or **Multitrend** layout
- **Open** - opens a previously saved template file (.tpl) or layout file (.lay). Also refer to *"How to use an existing X Series recorder screen/template to design GR Series screen/template" on page 21.*
- **Save** - saves the active template document or layout document.
- **Validate Layout** - checks for overlapping or off-screen widgets in the layout. A layout having such widgets cannot be run on the recorder. A dialogue box will appear describing what errors are present.
- **GO! Animate Layout** - Launches a Desktop simulation of the recorder that mimics signal activity to the layout. screens in the layout should have their widgets set up with pen information. *See "Animation" on page 58.*
- **Browse Bitmaps** - Bitmap library for adding and selecting bitmaps
- **Cut** - removes the selected item to the clipboard for pasting
- **Copy** - copies the selected item to the clipboard for pasting
- **Paste** - paste an item from the clipboard
- **Undo** - undoes one or more previous commands
- **Redo** - redoes one or more previous commands
- **Sticky Widgets** - A mode that allows widgets and objects to align more easily. The mode can be toggled on or off.
- **Expert Mode** - A mode that enables the user to select the objects contained in a widget. The mode can be toggled on or off. Normal Mode just allows the widget to be selected. Default is Normal Mode.
- **File Browser** - toggles the File Browser window on and off from the application interface
- **Toolbox Window** - toggles the Toolbox Window on and off from the application interface
- **Properties Window** - toggles the Properties Window on and off from the application interface

File Menu



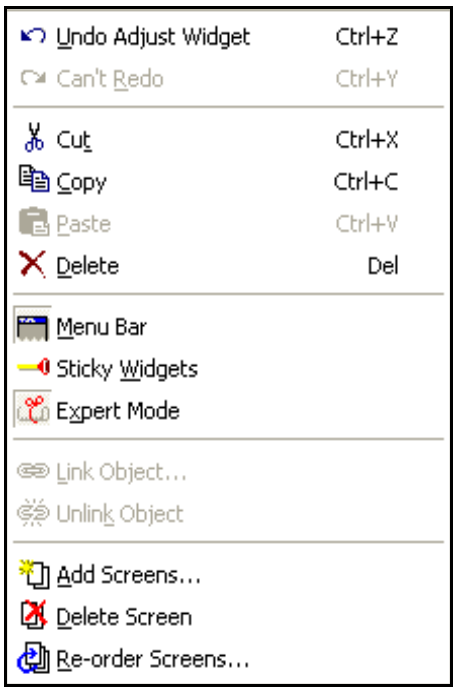
Listed below are the items that appear in the File menu.

- **New** - a new blank template to create a **Minitrend** or **Multitrend** layout
- **Open** - opens a previously saved template file (.tpl) or layout file (.lay). Also refer to *"How to use an existing X Series recorder screen/template to design GR Series screen/template" on page 21.*
- **Close** - closes the layout currently being displayed
- **Save** - saves the active template document or layout document.
- **Save As** - saves the active template document or layout document. Allows you to specify a different location or name for the file.
- **Load Setup -** loads a recorder setup to use its settings for all open template documents and layout documents
- **Unload Setup -** unloads the currently loaded setup file and reverts to the default setup
- **Validate Layout -** checks for overlapping or off-screen widgets in the layout. A layout having such widgets cannot be run on the recorder. A dialogue box will appear describing what errors are present.
- **Animate Layout** - Launches a Desktop simulation of the recorder that mimics signal activity to the layout. screens in the layout should have their widgets set up with pen information. *See "Animation" on page 58.*
- **Browse Bitmap Library -** Bitmap library for adding and selecting bitmaps
- **Properties** - displays the number of templates and screens used and available for a layout
- **Most Recently Used File List** - A list of the latest previously opened files. Select a file to open it.
- **Exit** - closes **Screen Designer** (a prompt to save any unsaved layouts will appear if required)

Edit Menu

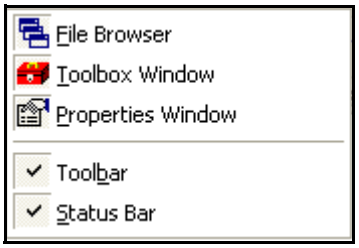
The contents of the Edit drop down menu will change depending on whether a template or screen is being displayed in the Design window. For example, if a template is being displayed, then the Edit menu will offer Add template, Delete template and Re-order templates or screens, depending of what is currently displayed in the Design window.

Listed below are the items that appear in the Edit menu



- **Undo** - Undoes one or more previous commands
- **Redo** - Redoes I one or more previous commands
- **Cut** - removes the selected item to the clipboard for pasting
- **Copy** - copies the selected item to the clipboard for pasting
- **Paste** - paste an item from the clipboard
- **Delete** - deletes selected item
- **Menu Bar** - shows or hides the menu bar on the template or screen currently being displayed.
- **Sticky Widgets** - A mode that allows widgets and objects to align more easily. The mode can be toggled on or off.
- **Expert Mode** - A mode that enables the user to select the objects contained in a widget. The mode can be toggled on or off. Normal Mode just allows the widget to be selected. Default is Normal Mode.
- **Link Object** - links objects having a scale to maintain their relative zero and span relationship. Objects having a scale include the alarm markers object, the bar object, the chart object, the pen pointers object, and the scale object. Objects must be of the same orientation.
- **Unlink Object** - un-links an object from another object
- **Add Template/Screen** - adds a template/screen to an open file in the Design window
- **Delete Template/Screen** - deletes the template/screen that is currently being displayed
- **Re-Order Templates/Screens** - specify the display order of the screens or templates in a layout
- **Insert Template From File -** (only avalable when you are in the template tab). Inserts just a template, stored as a template (.tpl) file from a location of your choice into the open layout.
- **Save Template** - (only avalable when you are in the template tab). Just saves the selected template to a template (.tpl) file to a location of your choice. Does not save any screen information in the layout.

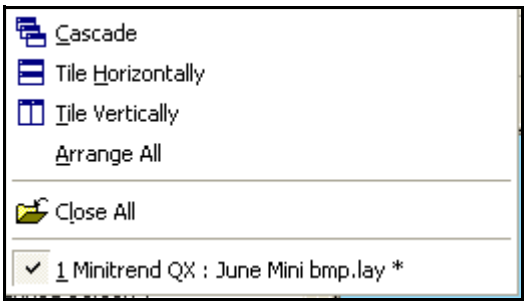
View Menu



The contents of the View menu are:

- **File Browser** - toggles the File Browser window on and off from the application interface
- **Toolbox Window** - toggles the Toolbox Window on and off from the application interface
- **Properties Window** - toggles the Properties Window on and off from the application interface
- **Toolbar** - toggles the main Toolbar on and off at the top of the application interface
- **Status Bar** - toggles the status bar on and off at the bottom of the application interface

Window Menu



Contents of the Window menu are:

- **Cascade** - will display multiple Design windows overlapping each other
- **Tile Horizontally** - will display multiple Design windows underneath each other
- **Tile Vertically** - will display multiple Design windows side by side
- **Arrange All -** arranges all minimised Design windows at the bottom of the design area.
- **Close All** - closes all template documents and layout documents that are open
- Lists all of the template documents and screen documents open in **Screen Designer**. A tick mark is shown against the document that is currently active.

Help

No Help files are currently available for this version of **Screen Designer**.

- **About** - license and version information

Status Bar

This is the grey bar that runs along the bottom of the interface.

On the left it displays the status “Ready” or the prompt for a Toolbar button or menu command. In the middle the first pair of co-ordinates refer to the realtime horizontal and vertical position, in pixels, of the selected object or widget in relation to the top left corner of the template or screen. The second pair of co-ordinates to the right refer to the width and height, in pixels, of the selected object or widget.

Drag the object or widget to resize/reposition it or type in the dimensions or the position into the boxes and press enter to ensure exact size and position.

On the far right of the status bar is displayed NUM, which indicates that NUM Lock is set on the PC’s keyboard. CAP is also displayed, and if shown, indicates that CAP Lock is set on the PC’s keyboard

When a widget or object is selected its Left, Top, Right, and Bottom co-ordinates are displayed in the Properties window. These co-ordinates can be changed by entering new values in the Properties window.

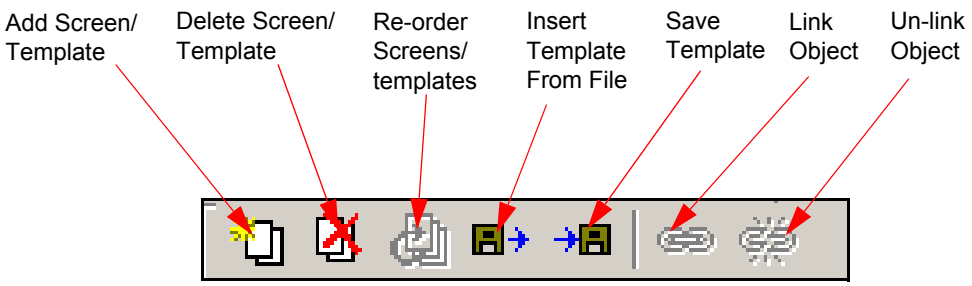
Design Window

The Design window is the area where a layout is created. This is started by selecting a new template from the Design window to which widgets and objects are added. When this is complete, a screen can be added using the template. Next, pen/channel mapping configuration can be performed on the screen. Finally, the layout document can be saved as a layout (.lay) file. These files can all be viewed in the File Browser window. The same template can be used to create many screens.

Also refer to *“How to use an existing X Series recorder screen/template to design GR Series screen/template” on page 21.*

Design window toolbar

Along the top of the Design window is a toolbar that will display similar sets of buttons depending on whether the templates or screens outer tab is selected.



Design window tabs

The Design window has tabs to display the different areas of the layout. There are two sets of tabs at the bottom of the window. The outer set of tabs switches between templates and screens. The inner set of tabs displays all the templates or screens depending on which of the outer tabs has been selected.

Multiple Design windows can be open at the same time.

Figure 3.2 Templates outer and inner tabs

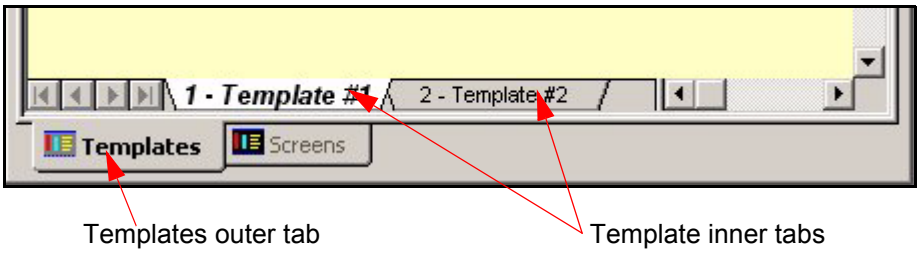
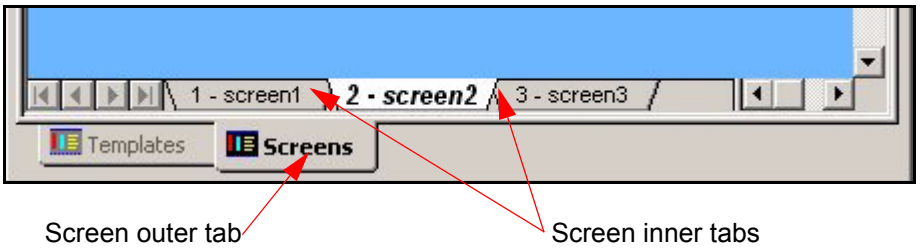
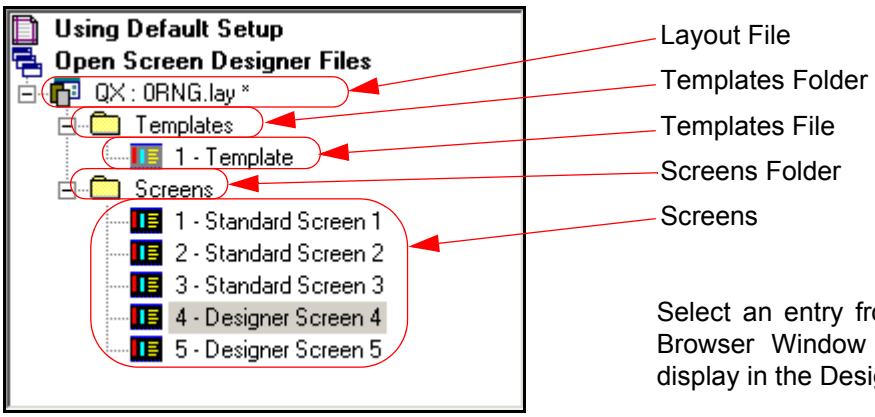


Figure 3.3 Screens outer and inner tabs



File Browser Window

Figure 3.4 File Browser Window



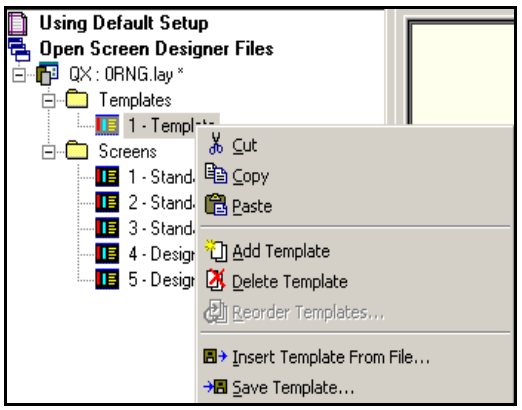
The File Browser Window shows the hierarchical structure of each open file in **TrendView Screen Designer**. It lists templates and screens in separate sections. Each section can be expanded or collapsed as denoted by a + or - symbol. Click on a + symbol to expand a section. Click on a - symbol to collapse a section.

The names of templates and screens are displayed in the File Browser Window. Each template and screen can be re-named for ease of identification. To rename a template or screen, select the template or screen entry and wait a second. Select the same entry again and an edit box will appear around it. Enter a new name then press the enter key on the keyboard when the entry is finished.

Right click on a template or screen entry in the File Browser window to show a menu of allowable commands that apply to that template or screen.

Also refer to *"How to use an existing X Series recorder screen/template to design GR Series screen/template" on page 21.*

Right click template commands



Right click screen commands

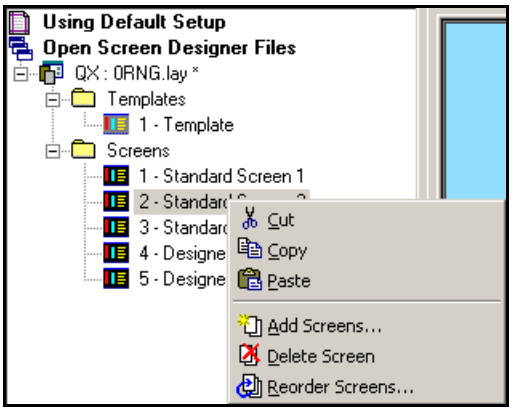


Table 3.1 : Right click template and screen commands

Template commands	Screen commands
Cut - removes the template to the clipboard for pasting	**Cut** - removes the screen to the clipboard for pasting
Copy - copies the template to the clipboard for pasting	**Copy** - copies the screen to the clipboard for pasting
Paste - pastes the template on the clipboard to the same layout or to a different layout	**Paste** - pastes the screen from the clipboard to the same layout or to a different layout
Add Template - adds a new template	**Add Screens** - Adds one or more new screens. You specify the template for each screen that you add.
Delete Template - deletes this template	**Delete Screen** - deletes this screen
Re-order Templates - allows the user to change the display order of the templates that are shown in the File Browser window and in the Design window	**Re-order Screens** - allows the user to change the display order of the screens that are shown in the File Browser window and in the Design window.
Insert Template From File - opens the Insert template dialog to search for a template in an existing template (.tpl) file to insert into the active layout	
Save Template - opens the Save As dialog to specify the location in which to save this template to a template (.tpl) file.	

File Types

- *"Layout File" on page 19* - contains one or more templates, zero or more screens
- *"Template File" on page 20* - contains a single template
- *"Setup File" on page 23* - contains a single setup only
  (imported from **TrendManager** software, not created in **Screen Designer**).

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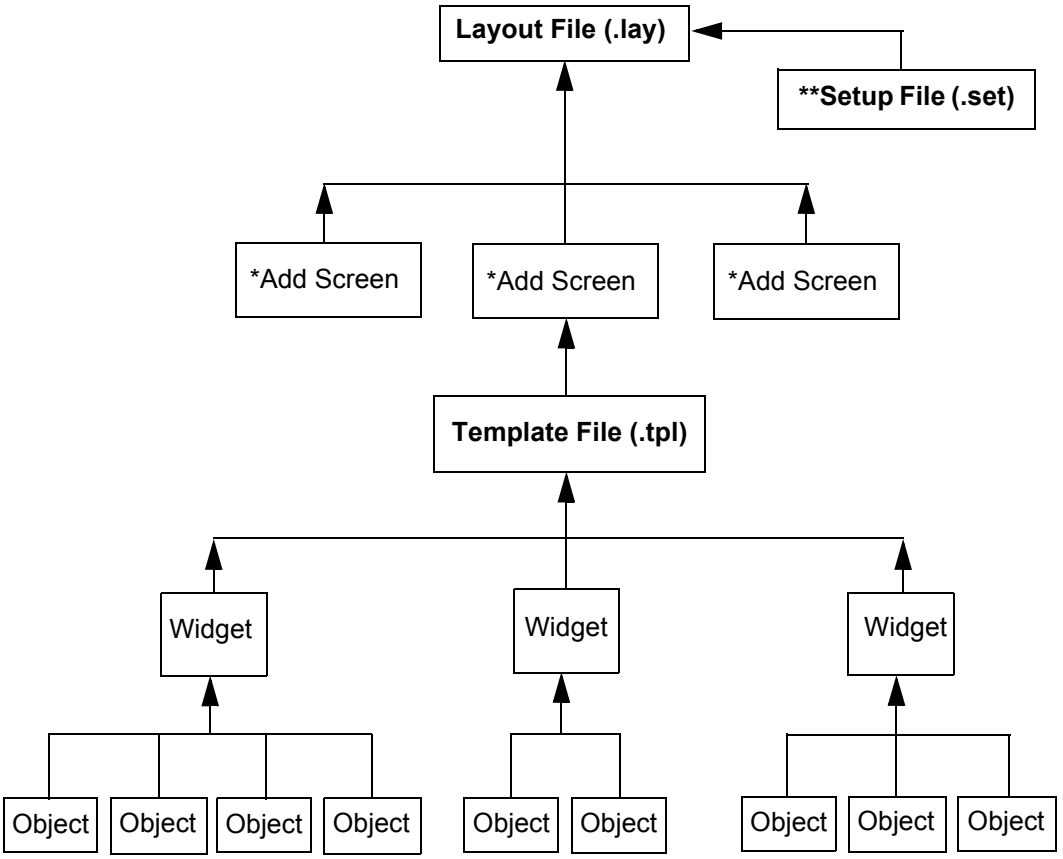
Figure 3.5 Example of what a Layout File can consist of



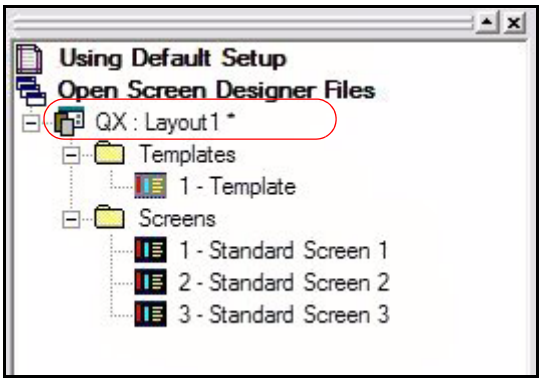
A minimum of one template and one screen is enough to create a layout file.

*A screen is not a file type but a pen/channel mapping device that is saved together with the template(s) as a layout file (.lay).

** A Setup file cannot be opened or created in **Screen Designer**. The setup file is loaded into the **Screen Designer** software and includes all the recorder setup information such as the pen and pen/channel configuration.

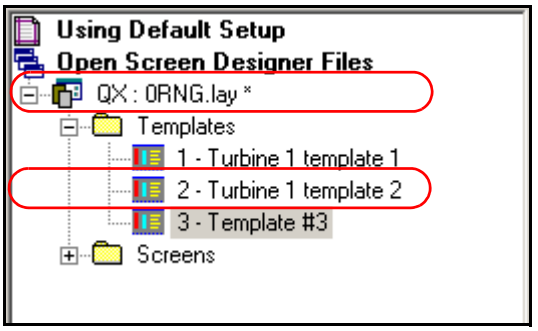
Layout File

Table 3.2 :

Layout File (.lay)	
Purpose	Contains the screen configuration (objects, widgets, templates and screens) of a recorder. The user can load the screen configuration into the recorder separately from its setup.
Contents	Contains one or more templates Note that there is always at least one template (even if it is empty) in a layout, and the user cannot delete the only template remaining in a layout. Contains zero or more screens
File Creation Details	In order to create a layout file, **Screen Designer** prompts the user for the recorder type. **Screen Designer** uses the recorder type to determine the screen size of the templates to be created in the layout. **Screen Designer** saves the recorder type that was specified by the user in the layout file.
Tabs in Design window	Templates tab Template #1 Name tab to template #n Name tab Screens tab Screen #1 Name tab to screen #n Name tab
Contents Shown in File Browser Window	The recorder type and file name is shown for each layout file as shown in the example below. **QX** or **GR Minitrend** and **SX** or **GR Multitrend** layout A setup that has been loaded into **Screen Designer** is associated with every layout open in **Screen Designer**. The first entry shown in the File Browser window is the setup being used (either the default setup or a user specified setup). Each template listed shows the template number and name, and each screen listed shows the screen number and name. 

Template File

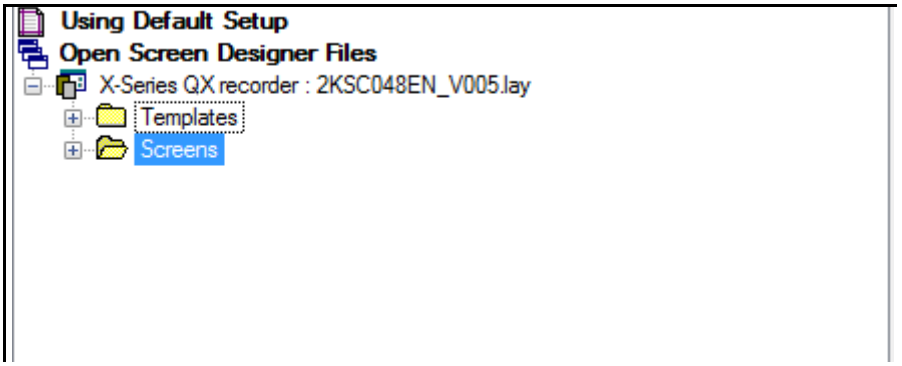
Table 3.3 :

Template File (.tpl)	
Purpose	Contains a single template. The user can load this template into a recorder and set up screens in the recorder based on it. A template can be inserted into a layout open in **Screen Designer**.
Contents	Contains a single template
File Creation Details	A template file can be created from a template being displayed in **Screen Designer** by clicking on the Save Template button on the File Design window toolbar or by selecting the Save Template command on the Edit menu. The template can also be saved by right clicking on the template entry in the File Browser window and selecting the Save Template command from the menu. **Screen Designer** saves the recorder type that was specified by the user in the template file.
Tabs in Design window	Templates tab Template #1 Name tab Screens tab No Screens Configured tab
Contents Shown in File Browser Window	The recorder type, template name, and file name is shown for each template file as shown in the example below. 

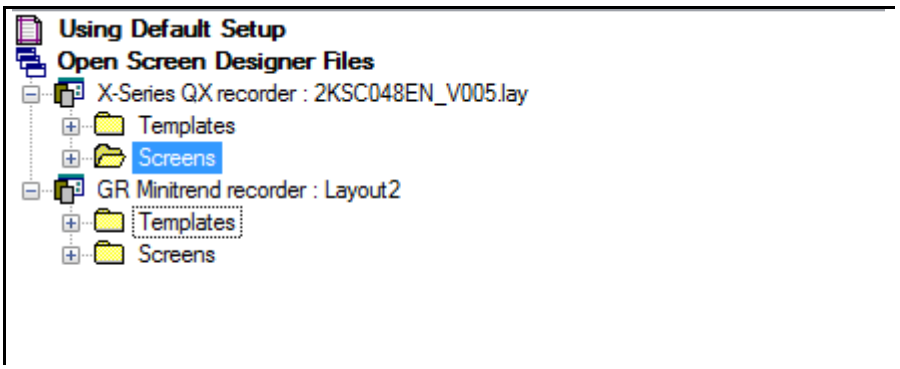
X Series and GR Series screen/template

How to use an existing X Series *recorder screen/template to design* GR Series *screen/template*

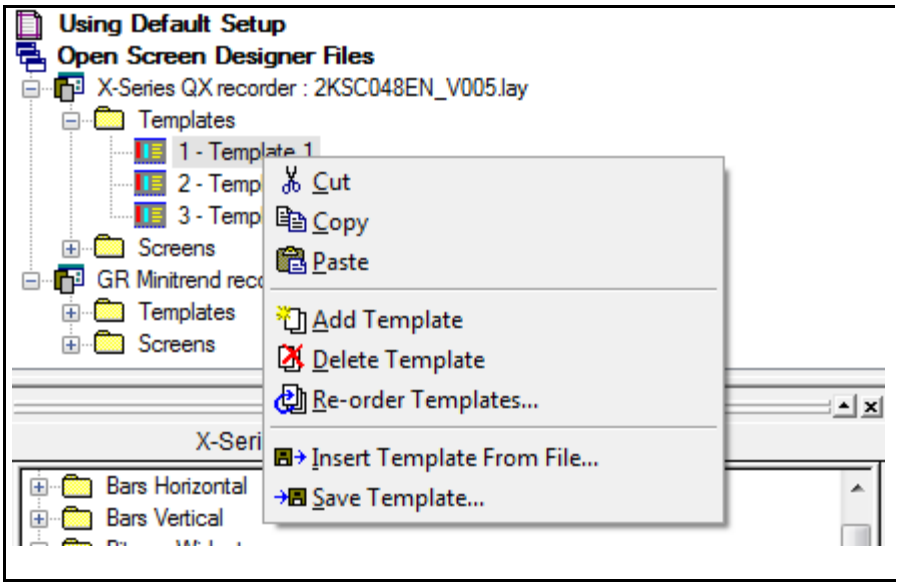
1.Open **X Series** layout file in screen designer – it will open layout mentioning recorder type



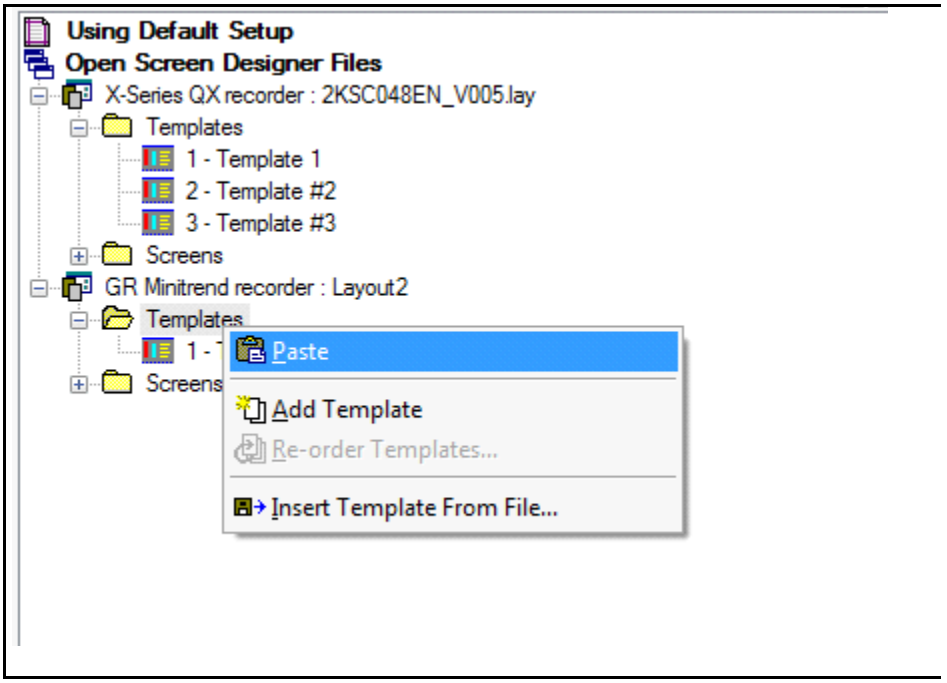
2.Add **GR Series** recorder in screen designer using “New” button



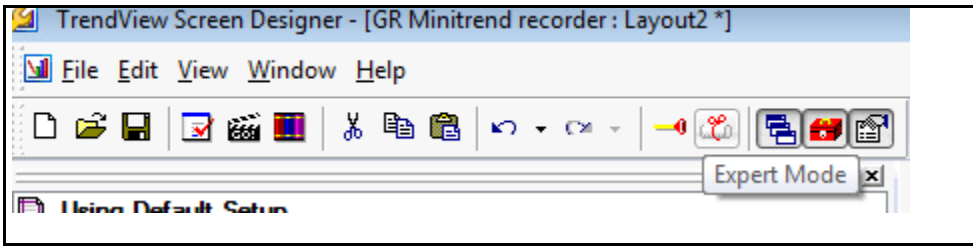
3.Copy **X Series** template file



4.Expand **GR Series** recorder template and Paste it



5.Taking help of “expert mode” adjust template in view format as desired

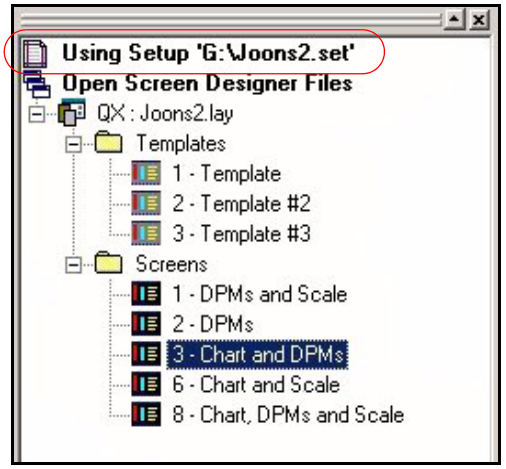


6.Save **GR Series** layout in local m/c and load in **GR Series** recorder using SD/USB media

Setup File

The Setup File contains a single setup for a recorder. A Setup file is not opened or viewed by **Screen Designer**. A setup file can be loaded into **Screen Designer** and will apply to all layouts open in **Screen Designer**. When a setup file is loaded into **Screen Designer**, its settings, such as pen tag and unit information, will be used in displaying all of the layouts open in **Screen Designer** and for the animation of any layout open in **Screen Designer**

Table 3.4 :

Setup File (.set)	
Purpose	Contains the physical configuration (a setup) of a recorder (pens, I/O, and communications). The user can load a setup to the recorder separately from its screen configuration. Loading a setup in screen Designer allows **Screen Designer** to display the actual user-entered pen information on templates and screens, such as the pen tag, pen units, or pen description, rather than generic text, such as “Pen 1”, “%”, or “”, respectively. Only one setup at time can be loaded into **Screen Designer** and the loaded setup will apply to all layouts in use.
Contents	Contains a single setup
File Creation Details	A Setup file cannot be created by **Screen Designer**.
Tabs in Design window	There is no Design window shown for a setup. The user does not open or close a Setup file in **Screen Designer**.
Contents Shown in File Browser Window	The first entry listed in the File Browser window shows which setup is being used for all layouts open in **Screen Designer**. This is either the default setup or a user specified setup.  .

Properties Window

The Properties Window can be dragged and docked to any edge of the application interface. It can also float in the application interface. The same is true for the File Browser Window and the Toolbox Window, although they can be docked only to the left or right edge of the application interface.

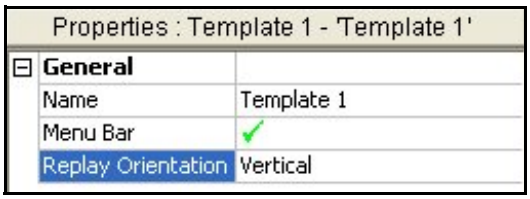
When a template, screen, widget or object is selected in the Design window a full list of characteristics for that item is displayed in the Properties window. The characteristics can be changed in the Properties window and the changes can be seen immediately in the Design window.

The Properties window will display:

- Template Properties - *See "Template Properties" on page 24.*
- Screen properties - *See "Screen Properties" on page 25.*
- Widget properties - *See "Widget Properties" on page 26.*
- Object properties - *See "Object Properties" on page 27.*

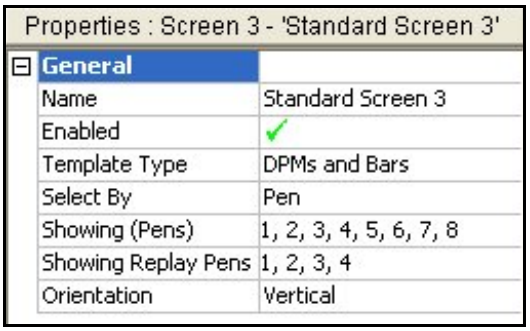
Template Properties

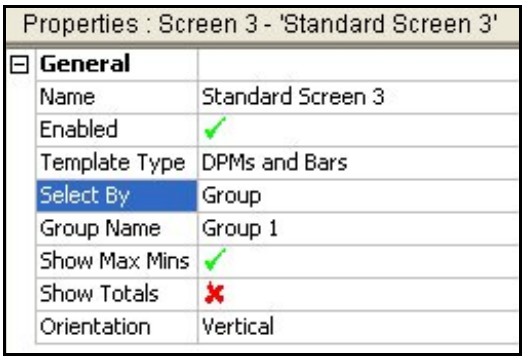
Table 3.5 : Example of Template Properties

	**General**
	Name - Select to Change the name
	Menu bar - Toggles the recorder menu bar on and off at the top of the template and at the top of all screens based on the template.
	Replay Orientation - Select Horozontal or Vertical orientation for Replay mode.

Screen Properties

Table 3.6 : Example of Screen Properties

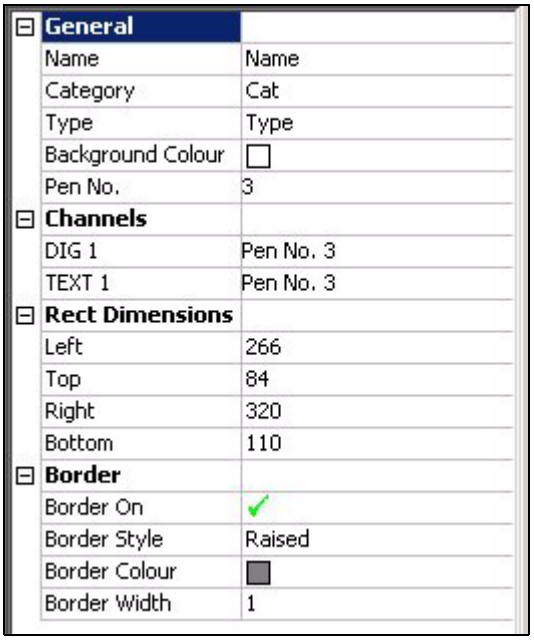




General
Name - Select to Change the name
Enabled - Toggle On and Off to enable or disable this screen. A disabled screen will not be shown on the recorder.
Template Type - Select from a list of all templates in the lay-out.
Select By - Pen or Groups.
Showing (Pens) - Only available if Select By - Pen is selected. Add and remove Pens, Max Mins anor Totals for this screen.
Showing Replay Pens - Only available if Select By - Pen is selected. Add and remove Pens to show on Replay Screen
Group Name - Only available if Select By - Group is selected. Select a Group#
Show Max Min - Only available if Select By - Group is selected. Toggle On and Off to enable or disable.
Show Totals - Only available if Select By - Group is selected. Toggle On and Off to enable or disable.
Orientation - (Not DPMs). Set the orientation to Vertical or Horizontal for Scales and Charts.

Widget Properties

Table 3.7 : Example of a Properties window for a Digital Widget in a Screen

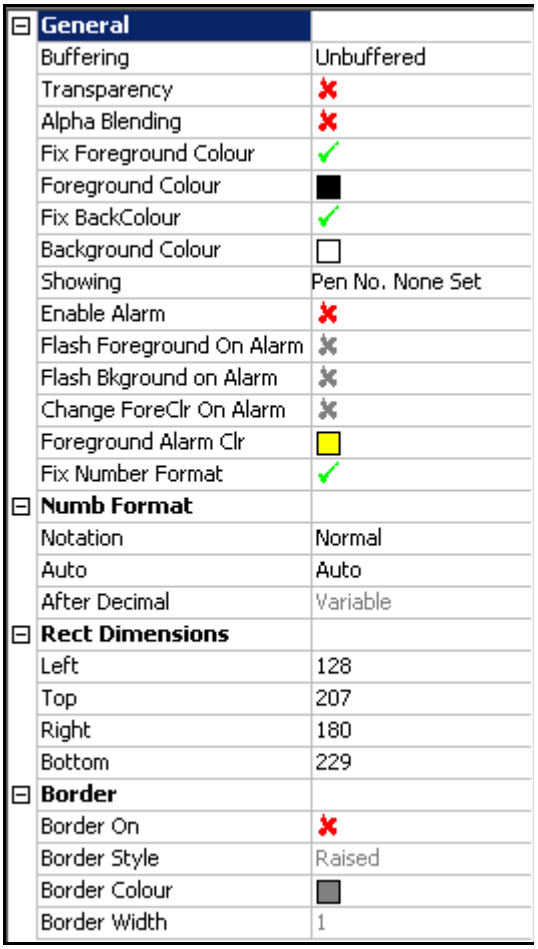


General
Name - each widget instance can be given its own name
Category **-** A widget category (such as Bar widget) can contain different types of widgets in that category (such as Horizontal, for a horizontal bar widget, or Vertical, for a vertical bar widget)
Type - of widget from the Toolbox
Background Colour - colour palette for the widget background
Pen No. - a quick way to assign a single pen to all objects in a widget rather than having to specify individually the same pen for each object. For example, if a widget contains a bar, scale, digital, and alarm markers object, all of these objects can be set up to use the same pen by just specifying Pen No.
Channels - Channels specify where objects in the widget get their data from
DIG 1 - First Digital shown on this widget
TEXT 1 - First Text item shown on this widget
Rect. Dimensions - Dimensions of the widget
Left - position of the left edge of the widget on the template
Top - position of the top edge of the widget on the template
Right - position of the right edge of the widget on the template
Bottom - position of the bottom edge of the widget on the template
Border - edge around the widget
Border On - turns the border on around the widget
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the widgets border
Border Width - enter border width, up to 15 pixels

For more information see *"Designing a Widget" on page 42*

Object Properties

Table 3.8 : Example of properties for a Digital Object in a Screen



General
Buffering - redraws off line to reduce screen flicker if this is set to double-buffered
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the active part of the object
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - None set. This will display the pen showing on this object
Enable Alarm - Enables an Alarm for that Digital object
Flash Foreground on Alarm - Foreground flashes when alarm active
Flash Bkground on Alarm - Background flashes when alarm active
Change ForeClr on Alarm - Change the colour of the foreground alarm
Foreground Alarm Clr - Colour palette for the foreground alarm
Fix Number Format - Number format options appear when ticked
Rect. Dimensions - Dimensions of the object
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border - edge around the object
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels

For more detailed information see *"Object Properties" on page 44*

Toolbox Window

The Toolbox Window, in the middle left of the screen, has two tabs for widgets and objects. Sets of pre-defined widgets and objects have been created and loaded into the Toolbox library.

Widgets Tab

The widgets tab has been divided up into folders containing a selection of pre-designed widgets. Each folder will expand displaying each variation of a particular widget type. Each widget is different.

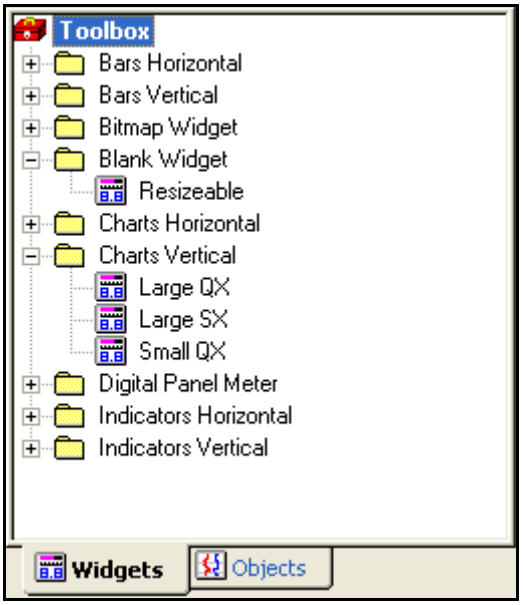
For example, in the “Indicators Horizontal” folder there are 8 widgets,.There are 4 widgets for the **Minitrend** and 4 widgets for the **Multitrend** recorder. This list shows the type of variations:

- **MinitrendBar Type 1** - contains Bar and Scale objects
- **MinitrendBar Type 2** - contains a Bar, a Scale and Alarm Markers objects
- **MinitrendBar Type 3** - contains Bar and Scale objects with alpha blending and transparency switched on
- **MinitrendBar Type 4** - contains a Bar, a Scale and Alarm Marker objects with alpha blending and transparency switched on

Select the most suitable widget from the list and Drag and Drop the pre-defined widgets onto a template. Or select the Blank re-sizable widget and add your own objects from the objects tab.

A widget on a template can be renamed for ease of identification in the Properties window.

Figure 3.6 Toolbox window - Widgets tab



Objects tab

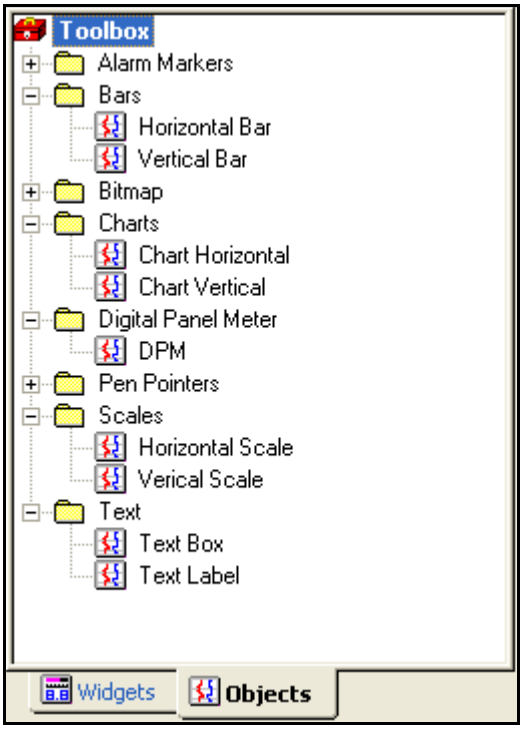
The objects tab has been divided up into folders containing a selection of pre-designed objects. Each folder will expand displaying each variation of a particular object type. Each object is different.

For example, in the “Charts” folder there is a “Chart Horizontal” object and a “Chart Vertical” object.

Select the desired object from the list and Drag and Drop it onto a blank widget or a predefined widget.

Select the objects tab to display a list of pre-deifined objects that the user can Drag and Drop into a widget.

Figure 3.7 Toolbox window - Objects tab



Select the correct screen resolution size for the recorder. The widgets showing **X-Series** should be used for **X-Series** recorders and remaining are for **GR SeriesNote:** Non-Process screen added in **GR Series** recorders will not load in Screen Designer, it will load only Standard and Custom screen

“Animate layout” will always launch a **GR Series** recorder, even though the screen is design for **X-Series** recorder

Templates

A template is the area where widgets are placed to create a layout. Adding a screen based on a template will enable channels to be mapped and pen information to be displayed on the screen. The same template can be used in many layouts if they are required to look the same.

For example: Template #1 has 4 DPMs. Add Screen 1 which has pens 1 to 4 configured. Template #1 can be used again with Screen 2 which has pens 5 to 8 confgured.

A template can be saved on its own as a Template (.tpl) file. The template file can be loaded into a recorder an the pen/channel configuration can be set up on the recorder.

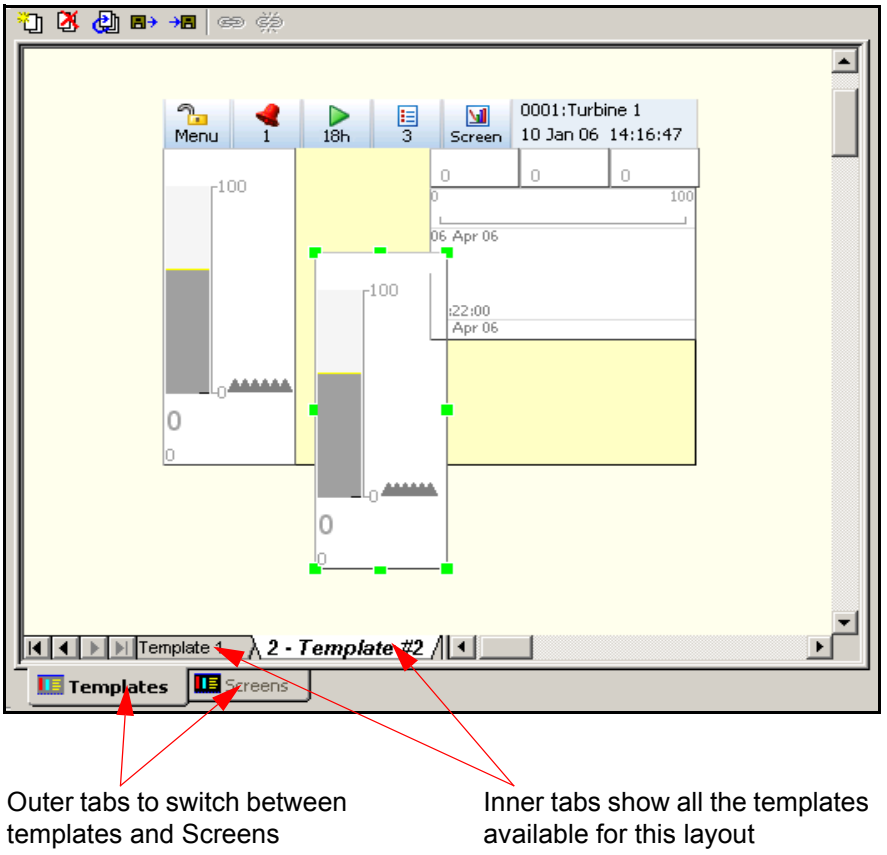
To start a new layout design go to ***New*** in the main tool bar, or to open an existing layout file go to ***Open*** and browse for the desired layout (.lay).

When you start a new layout there are two sizes to choose from depending on the type of recorder. Select one from the list and a new Design window will appear in the middle of the PC's screen displaying Template #1.

Up to 32 templates can be used per layout.

For more information on the template file specification see *"Template File" on page 20*

Figure 3.8 Design window showing a new template and a Vertical bar widget from the Toolbox



⚠ CAUTION

IMPORTANT NOTICE FOR TEMPLATES AND SCREENS

Any changes to a template will affect all screens which use the template. Also be aware that any design changes made in a screen will affect all of the other screens using that template and will change the template itself.

This **CAUTION** symbol may indicates a potentially hazardous situation, which, if not avoided, **may result in property damage.**

Template Tabs

At the bottom of the Design window are two sets of tabs. The outer tabs are to swap between viewing templates or screens. When templates are selected on the outer tab then the inner tabs will display just templates. From the toolbar at the top of the Design window there are icons to add, delete and re-order templates.

A layout can consist of many templates. It is when you add a screen to the layout that you choose which template is going to be used for that screen.

A layout with many templates can be loaded into the recorder and different templates can be selected at the recorder level to create new screens. *See "Loading a Template into a Recorder" on page 59.*

Association with a Screen

To see which screens use which template go to the Properties Window for each screen and check the template Type property. The purpose of adding a template to a screen is so the user can set up channel/pen configuration. When the screen and the template are complete the two are saved as a layout (.lay). To add a screen click on the screens tab and go to the toolbar and select Add Screens.

Template Toolbar

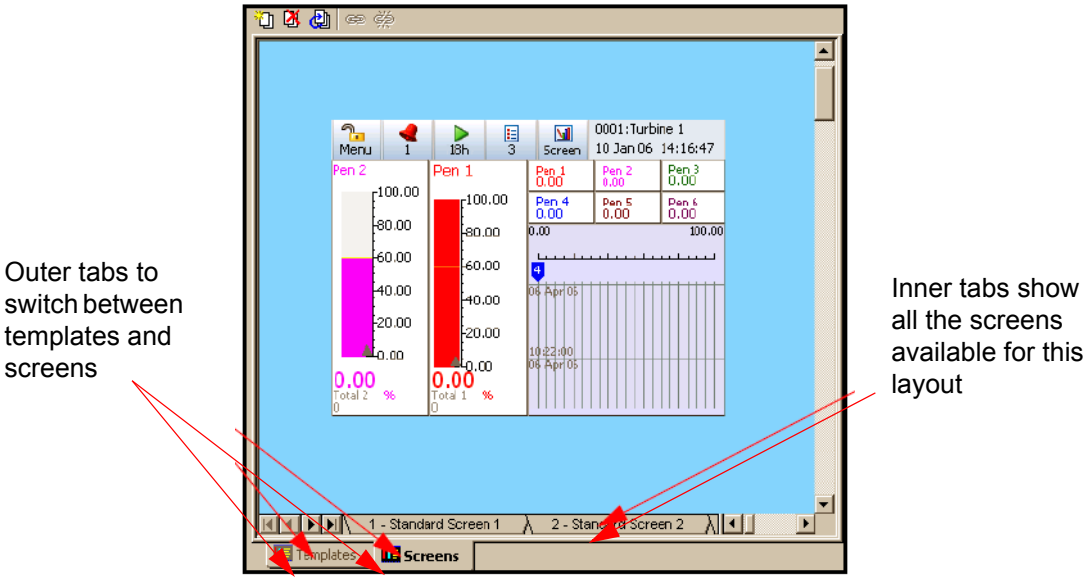
The Design window toolbar changes depending on if a template or screen is being displayed in the Design window. The toolbar runs along the top of the Design window when a layout has been opened. *See "Design window toolbar" on page 14.*

Screens

A screen is added to a template and provides pen/channel configuration for each object or widget on the template.

Screen Tabs

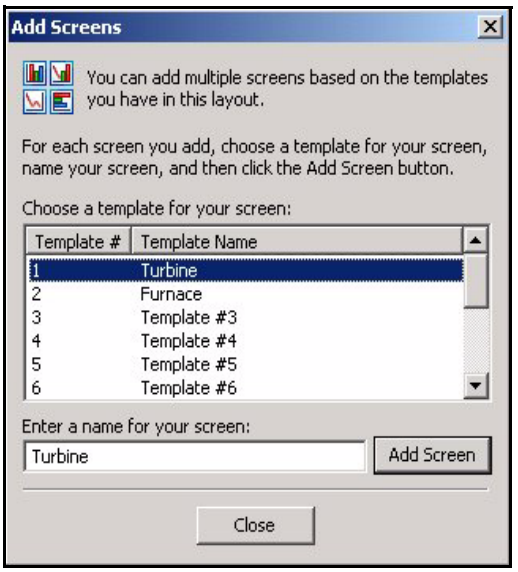
At the bottom of the Design window are two sets of tabs. The outer tabs are to swap between viewing templates or screens. The inner tabs will display the names given to the screens. From the toolbar at the top of the Design window there are icons to add, delete and re-order screens.



Add a Screen

When a template is complete select the screens (outer) tab and go to the screen toolbar at the top and select Add Screens. The Add Screens box will appear with a list of templates that can be chosen for the screens to be added. At the bottom of the Add screens box is where you can rename each screen to be added. By default the template you have selected from the list will appear in here.

The user can add multiple screens using this dialog before deciding to close it.


Add Screens
You can add multiple screens based on the templates you have in this layout.
For each screen you add, choose a template for your screen, name your screen, and then click the Add Screen button.
Choose a template for your screen:
Template #
Template Name
1 Turbine
2 Furnace
3 Template #3
4 Template #4
5 Template #5
6 Template #6
Enter a name for your screen:
Turbine
Add Screen
Close

Up to 32 screens can be used in one layout.

Screen Configuration

Screen configuration is assigning each object and/or widget to a pen/channel. *See "Configuring a Screen" on page 57.*

Screen Toolbar

The Design window toolbar changes depending on if a template or a screen is being displayed in the Design window. The toolbar runs along the top of the Design window when a layout has been opened. *See "Design window toolbar" on page 14.*

Screen Properties Window

When a blank area of the screen is selected the characteristics of the screen will be displayed in the Properties window. Some of the individual characteristics can be changed in the Properties window, including the screen name, see *Table 3.4 on page 23.*

Widgets

Widget Details

- Up to 64 widgets can be used per template.
- You can cut, copy, paste and delete widgets on a template.
- Widgets can be resized using the green coloured blocks that appear around the edge when it is selected, known as resize handles.
- Objects are confined to the boundaries of a widget for moving and resizing.
- A widget cannot contain another widget, only objects. For details of widget properties see *"Widget Properties" on page 26*.

Types of Widgets

Standard Widgets

Standard widgets are found in the widgets tab in the Toolbox window. The widgets tab will contain several styles of pre-designed widgets for immediate use. They can be dragged & dropped onto a template to aid in designing the template quickly.

Standard widgets in the Toolbox are:

Table 3.9 :

Widget	Description
Bars	A selection of Horizontal and Vertical Bars with Scales & Alarm Markers
Bitmap	Blank for own design; can be re-sized. Contains a blank bitmap object
Blank Widget	Blank for own design; can be re-sized
Chart	Horizontal and Vertical Chart object plus pen pointers, alarm markers.
Digital Panel Meter	A selection of Digital Panel Meters
Indicators	A selection of Horizontal and Vertical transparent Indicators (Bars with Scales & Alarm Markers) designed for use with Bitmaps

User Defined Widgets

User defined widgets are ones that the user has created and saved or by taking a blank widget or a standard widget and modifying it to create a new widget.

The user can create a new widget from scratch by selecting a blank widget from the widgets tab in the Toolbox window and dragging and dropping it onto a template. Add objects to the widget to create the desired design. Widgets have to be saved as a part of a template.

Association with an Object

A widget is a graphical display container for objects. Up to 64 objects can be placed into a widget. None of the objects can be resized beyond the boundaries of the widget. *See "Objects" on page 35.*

Widget Properties Window

When a blank area of the widget is selected the characteristics of the widget will be displayed in the Properties window. Any objects on the widget will also appear on the properties window, listed under Channels. When the widget is selected, green resizing handles will appear around the edge of the widget. The individual characteristics of the widget can be changed in the Properties window, see *"Properties Window" on page 24*

> NOTICE
>
> If a widget has many objects in it, it is sometimes difficult to know where to select a blank area of the widget. It is easy to select an object by mistake instead. You can force selecting the widget instead of an object in it by holding down the Ctrl key on the keyboard while you click anywhere in the widget.

Objects

Object Details

- Up to 64 objects can be used per widget.
- You can cut, copy, paste and delete objects from a widget.
- Objects can be resized using the blue coloured handles that appear around the edge when it is selected.
- Objects can also be linked to other objects, see *"Linking Objects" on page 40.*
- For details of object properties see *See "Object Properties Window" on page 40..*

Types of Objects

Alarm Markers Object

The Alarm Markers object will appear only if the Alarms are enabled for the pen that it uses. Alarm markers can be set to flash when an alarm is active. The colour of the alarm marker can also be set. When an alarm markers object has its Height property set to greater than 15, the alarm number will appear in the marker.

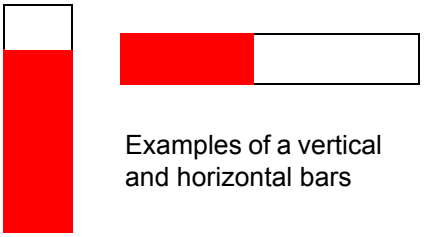
Vertical and Horizontal Alarm Marker objects

High Alarm active on a DPM

Low Alarm active on a DPM

Bar Object

A Bar object is a Bargraph indicator representing the input signal in a graphical form, ascending or descending in a vertical orientation or increasing to the right or the left in a horizontal orientation. To read a bar measurement accurately use a Digital object and or a Scale object.



Examples of a vertical and horizontal bars

Bitmap Object

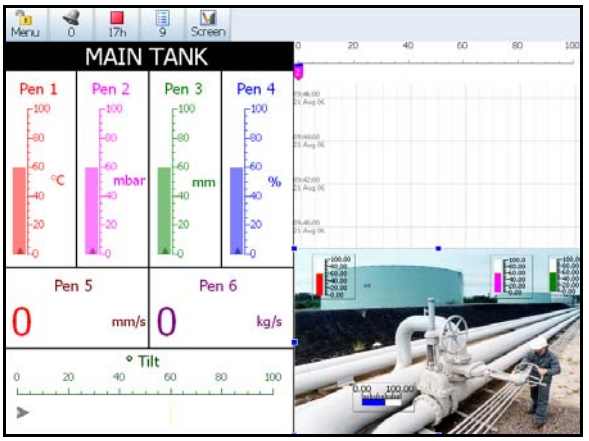
Bitmaps can be added to a bitmap object on a template to create a background image. Other widgets can be placed on top to depict activity within that image. They can also be used to enhance a screen design, such as adding a company or product logo.

Either drag and drop a bitmap widget onto the design area (it already contains a blank bitmap object) or drag and drop a bitmap object onto any existing widget. When resizing the bitmap, hold the shift key down to keep the aspect ratio.

Bitmap Library

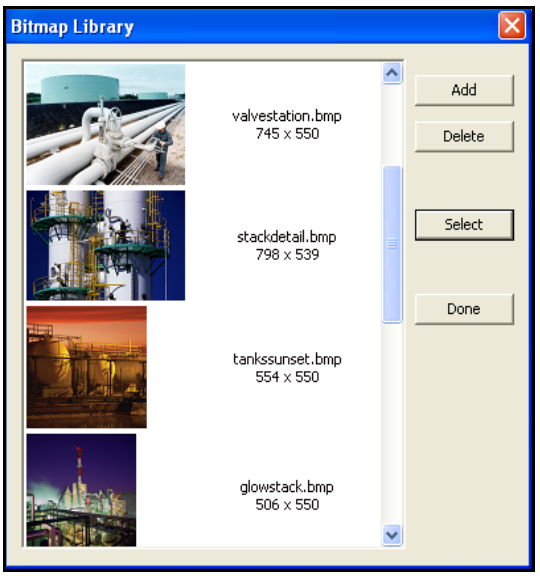
First, make sure you have the blank bitmap object selected then you can browse the bitmap library in the toolbar or in the File menu. Select a new bitmap and this will be insterted into the blank bitmap object. *See "Adding Bitmaps" on page 37.*

Bitmap inserted into a blank object on a blank widget



Bitmap inserted onto a widget in an existing layout

Adding Bitmaps



The bitmap library contains a few examples. To add your own bitmaps select the Add button and browse to the location of the bitmap you require on your PC.

To insert a bitmap you must first have a bitmap object selected in the layout. Go to the library, highlight the desired bitmap and press Select.

Bitmaps can be added and deleted from the library as required. Ensure that you do not delete any bitmaps from the library that are used in a layout, as they will disappear from the layout.

To Re-size a bitmap and maintain the aspect ratio of the original image hold down the Shift key on the keyboard when resizing using the grab handles

Chart Object

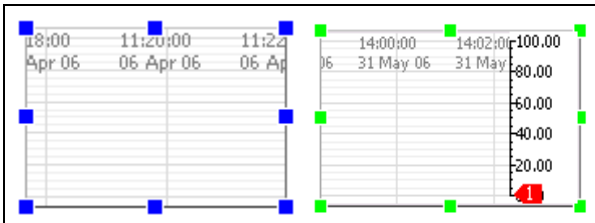


Chart object Chart widget

The Chart object can display multiple pen traces. The chart object has no Pen Pointers or Scale; it is just a Chart.

If a Chart, Scale and Pen Pointers object are required, select a Chart widget instead of a Chart object.

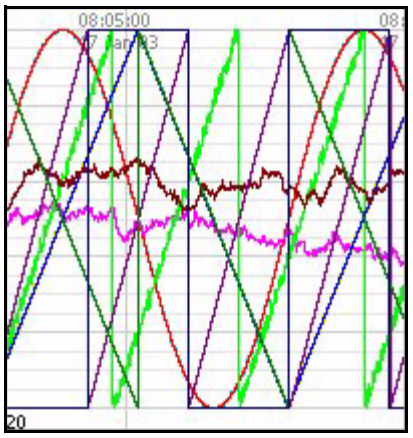


Chart object

Pen Pointers object

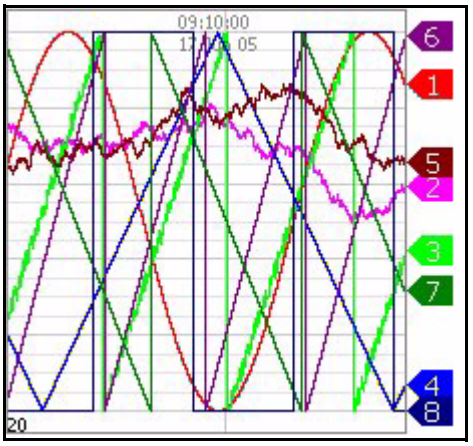
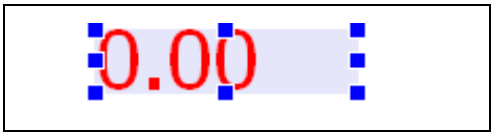


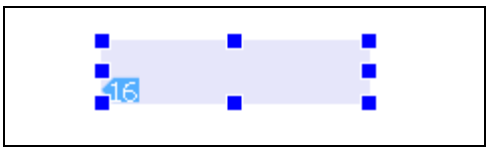
Chart object linked to the Pen Pointers object and aligned with the edge of the chart

Digital Object



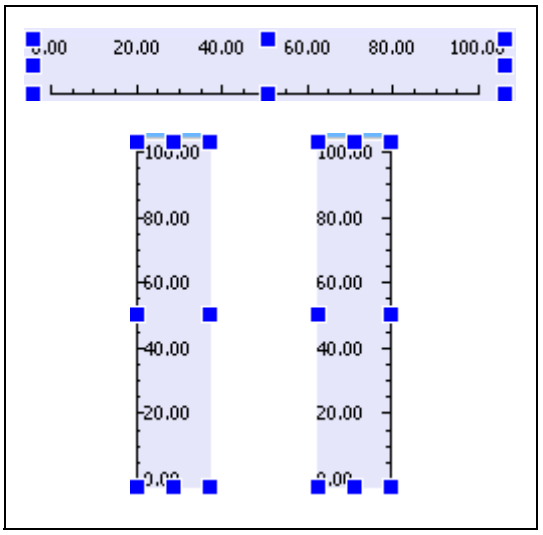
A Digital object is a numeric reading of the input signal. Used on their own or with a Bar object.

Pen Pointers Object



Pen Pointers can show multiple pens and are mainly used with charts to follow the exact position of the last reading with the pen number marked on each pointer. A pen pointer can be set to flash when an alarm is active on that pen.

Scale Object



The Scale object can be set to display any numeric value (max 23 decimal places). This is set in the “Showing” item in the Properties window for a Scale object in a screen tab. A Scale object is usually associated with a bar.

This example shows a horizontal scale with the label position at the top. The two vertical scales display left and right graduation and label direction

Text Object

Text objects can be used for adding the Pen tag/units, Labels, Max/Min, Totals or any text required. Choose a single line Text Label or a multiline Text Box.

Object Properties Window

When an object is selected the characteristics of the object will be displayed in the Properties window on the right. When the object is selected blue resizing handles will appear around the edge of the object. The individual characteristics of the object can be changed in the Properties window, see *"Object Properties" on page 44.*

Association with a Widget

A widget is a container for objects. Up to 64 objects can be placed into a widget. None of the objects can be resized beyond the boundaries of the widget. *See "Widget Details" on page 34.*

Linking Objects

Objects containing a scale can be linked together so that they are locked at the same size and will resize together. For more information see *"Linking Objects" on page 56*

Section 4: Designing a Layout

Starting a Layout

A layout can consists of one or more templates. The template(s) have widgets placed on them and objects can be added to the widgets. When the template design is complete a screen is added to the layout where the pen/channel configuration is set up. The layout is then saved as a .lay file type.

To start a new layout design:

1. Open **Screen Designer**
2. Click on New from the main toolbar.
3. Choose from two recorder types in the drop down list.
4. This will produce a layout with a blank template. By default this template will be named Template #1.

Designing a Template

The template area is the design area that is equivalent to the recorder screen size. The idea is to create a design by placing widgets onto the template and then placing objects on to the widgets. Widgets are just containers for objects. Objects will graphically represent the data on the recorder's screen.

Standard widgets are available from the widgets tab in the Toolbox. These are pre-designed widgets that can be used just as they are. *See "Standard Widgets" on page 34.*

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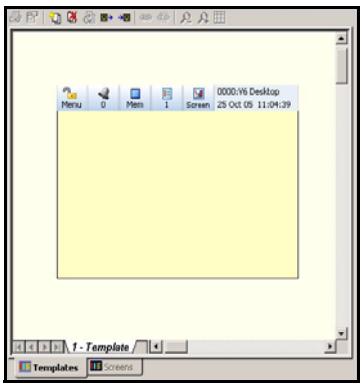
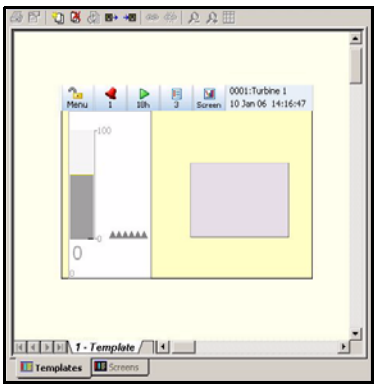
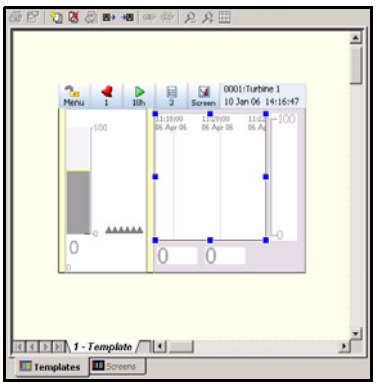
Figure 4.1 Template, Widget and Object



Blank template



A standard vertical Bar widget and a blank widget



The blank widget has a Chart, a Scale and two DPM objects added

In this example we will start with a blank template:

1. From the Toolbox window select, drag and drop a blank widget or a standard widget from the widgets tab in the Toolbox. Drag this onto the template.

2. When the widget is selected green resize handles appear around the edge and its properties will display in the Properties window. At this stage you may wish to change the background colour, border details etc.
3. One or many widgets may be placed onto the template, but must not overlap or go outside the template area.
4. Validate the layout to ensure there are no overlapping widgets
5. When the template is complete, select the screens outer tab and go to the Add Screens icon in the toolbar and add one or more screens that use the template.
6. Add pen configuration details and save the layout.

Expert Mode

To select objects on a widget, Expert Mode must be active. The Expert Mode icon is in the Main Toolbar at the top of the Design window.

To select the widget in Expert Mode and not an object in the widget, hold down the Ctrl key on your keyboard and select as normal with the mouse cursor. This is useful when there are many objects in the widget, and it is difficult to find an empty area of the widget to click on to select the widget.

Shortcuts

Right click on an object or widget and select Cut, Copy, Paste or Delete.

Object Order

When placing objects on top of each other it can become difficult to select an object that is overlapped by another. The order of how the objects overlap can be changed by right-clicking on the object and selecting Order; this is known as the Z-Order.

- Bring Forward: - moves an object one step higher in the Z-order
- Send Backward: - moves an object one step lower in the Z-order
- Bring to Front: - moves an object to the top of the Z-order
- Send to Back - moves an object to the bottom of the Z-order

Charts and Bitmaps should always stay behind other objetcts. For more information see *"Object Z - Order" on page 53.*

Designing a Widget

Widgets are graphical containers for objects; objects display elements that represent data in different graphical forms. Widgets are built up using a selection of standard objects from the objects tab in the Toolbox. Only objects can be placed in a widget; a widget cannot be placed in another widget.

Widgets, when selected, have green resize handles and can be moved and resized within the confines of the design area of the template.

Adding Objects

Drag and Drop a blank or standard widget to the template:

1. From the Toolbox window, select, drag and drop an object from the objects tab onto the widget.

2. When an object is selected, blue resize handles will appear and its properties will display in the Properties window. Objects have many properties that can be changed. For a definition of each property see *"Object Properties" on page 27*.
3. One or many objects can be placed onto the widget. Many widgets may be placed on the template.
4. When the template is complete, select the screens outer tab and go to the Add Screens icon in the Toolbar. Here you can add one or more screens using the template you just designed.
5. Add pen/channel configuration details by going to the "Showing" item in the Properties window. Pen/channel configuration can be performed per object or per widget. When complete the template and screen information can be saved as a layout (.lay) file.

The user can add more objects and more widgets to a design and change a layout. objects, when selected, can be moved and resized within the confines of a widget.

Bitmaps

For information on inserting bitmaps into your layout see *"Bitmap Object" on page 36.*

Pen Colours

The colours of the objects on the widget are determined by the pen/channel configuration that is set up in the Properties Window. *See "Configuring a Screen" on page 57.* Alternatively the colours can be changed individually in the properties window.

Table 4.1 : Pen colours

Pen #	Colour	RGB	Pen #	Colour		Pen #	Colour	
1	Red	225/0/0	17	Red Tint	255/39/87	33	Red Tint2	255/39/87
2	Magenta	225/0/225	18	Dark Purple	109/81/139	34	Dark Purple 2	109/81/139
3	Green	0/128/0	19	Olive	87/146/76	35	Olive 2	87/146/76
4	Blue	0/0/225	20	Light Navy	0/94/118	36	Light Navy 2	0/94/118
5	Dark Red	196/0/0	21	Light Orange	253/83/48	37	Light Orange 2	253/83/48
6	Dark Magenta	128/0/128	22	Light Purple	174/113/211	38	Light Purple 2	174/113/211
7	Dark Green	0/74/0	23	Light Olive	139/168/0	39	Light Olive 2	139/168/0
8	Dark Blue	0/0/137	24	Cyan	83/174/172	40	Cyan 2	83/174/172
9	Mid Red	235/39/87	25	Mid Orange	255/100/0	41	Mid Orange 2	255/100/0
10	Mid Magenta	109/81/142	26	Aqua	0/231/157	42	Aqua 2	0/231/157
11	Mid Green	87/146/76	27	Salmon	211/148/133	43	Salmon 2	211/148/133
12	Mid Blue	0/94/118	28	Dark Sand	201/144/41	44	Dark Sand 2	201/144/41
13	Light Red	253/83/48	29	Dark Olive	0/59/44	45	Dark Olive 2	0/59/44
14	Light Magenta	174/116/209	30	Lime Green	111/255/109	46	Lime Green 2	111/255/109
15	Light Green	139/168/0	31	Light Slate	74/74/81	47	Light Slate 2	74/74/81
16	Light Blue	83/174/255	32	Brown	96/0/0	48	Brown 2	96/0/0

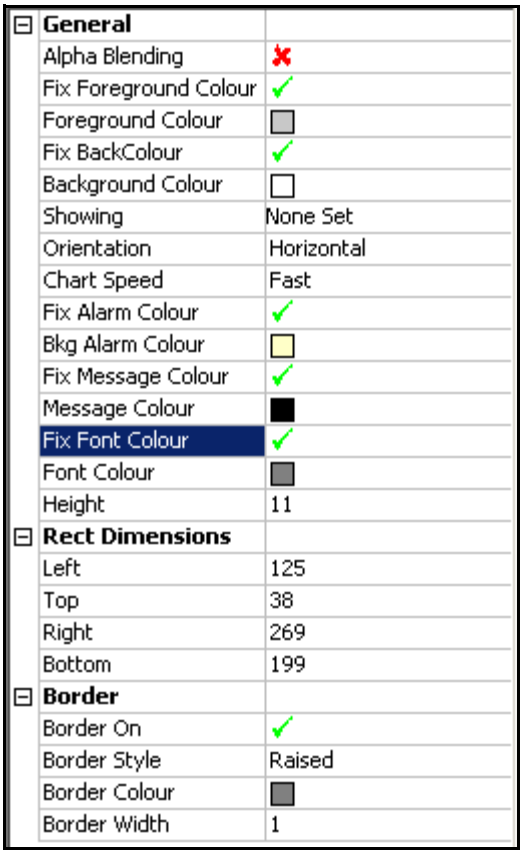
Object Properties

Practically all the elements of an object can be changed: Size, Foreground Colour, Background Colour, Orientation, Alpha Blending, Transparency, position on the template, Border, plus many more properties that are individual to each type of object.

The following tables give examples of each type of object and a list of their properties that can been changed.

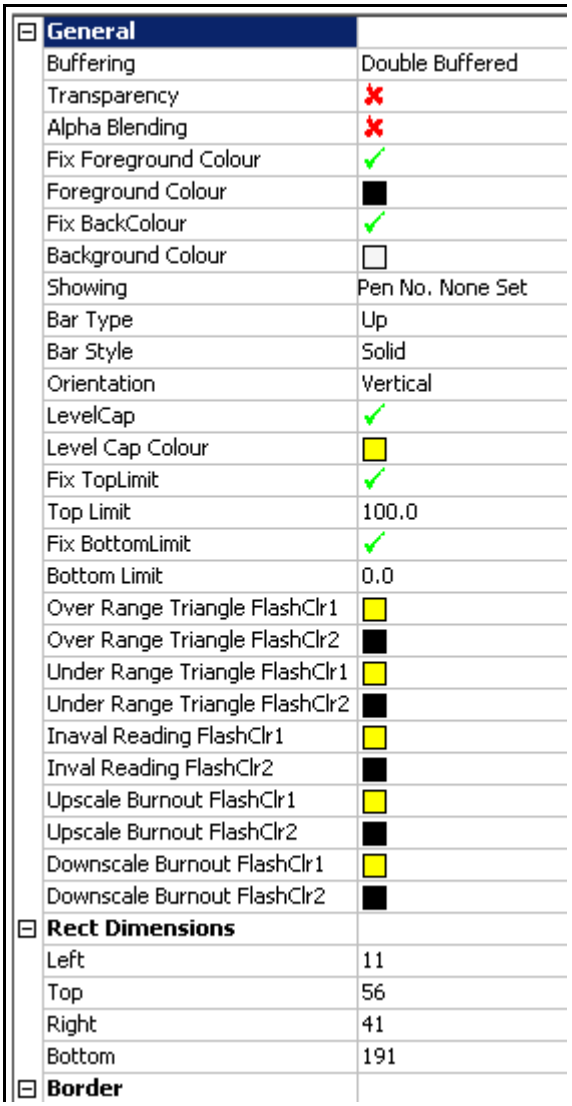
Chart Object Properties

Table 4.2 : Example of a Chart Object properties window in the Screen tab

	**General** Alpha Blending - semi transparent state for overlaying objects Fix Foreground Colour - Tick to fix colour for the horizontal and vertical graph lines of the chart. Foreground Colour - Set foreground colour using colour palette Fix BackColour - Tick to fix colour for the background of the object Background Colour - Colour palette for the background of the object Showing - Specify which pens to show on the chart Orientation - Horizontal or Vertical Chart traces Chart Speed - Fast, Medium or Slow Fix Alarm Colour - Tick to fix the alarm background colour for the Chart Bkg Alarm Colour - Colour palette for the background of the chart when an alarm is triggered Fix Message Colour - Tick to fix the colour for any Messages on the Chart Message Colour - Colour palette for the Message Colour Fix Font Colour - Tick to fix the colour of the Font for Text on the Chart (eg. date/time stamp) Font Colour - Colour palette for the Font Colour Height - Change the Font height for Text used on the Chart **Rect Dimensions** Left - position of the left edge of the object on the template Top - position of the top edge of the object on the template Right - position of the right edge of the object on the template Bottom - position of the bottom edge of the object on the template **Border** Border On - turns the border on around the object Border Style - Raised, Flat or Inset Border Colour - colour palette for the object border Border Width - enter border width, up to 15 pixels

Bar Object Properties

Table 4.1 : Example of Object Properties for a Bar in the Screen tab



General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the active part of the object
Foreground Colour - Set foreground colour using colour palette
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Set up channel as - Data from Pen, Alarm for Pen or Input Channel
Bar Type - direction of active object: Up, Down, None or Based (from a set point)
Bar Style - Solid, Fade, Dynamic or Traffic Light (*see below)
Orientation - of the bar: Horizontal or Vertical
Level Cap - Line at the top of the active part of the object
Level Cap Colour - Colour of the line at the top of the active part of the object
Fix Top Limit - Tick to set the top limit of the object. eg. to set up a traffic light effect
Top Limit - Set top limit of object
Fix Bottom Limit - Tick to set the bottom limit of the object
Bottom Limit - Set bottom limit of object
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels
Markers
Show Max Markers - Tick to display Max markers
Show Min Markers - Tick to display Min markers
Reset Markers - Clears the Max and Min values
Marker Colour - Colour palette to set marker colour

Bar Style

Solid

A solid bar is all one colour of the active part of the bar

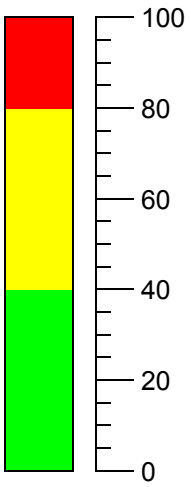
Fade

Once active the Gradient Start/End Colour Select will display below. Using the colour palette select the colours to start and end the colour fade of the active part of the bar

Traffic light

The Bar Style called Traffic Light consists of three colours; Red, Amber and Green in one bar object. **Screen Designer** only needs to know the two break points: Traffic Breakpoint Green, where the bar changes from green to amber and Traffic Breakpoint Amber, where the bar changes from amber to red.

Traffic Breakpoint Green is set to 40,
Traffic Breakpoint Amber is set to 80.

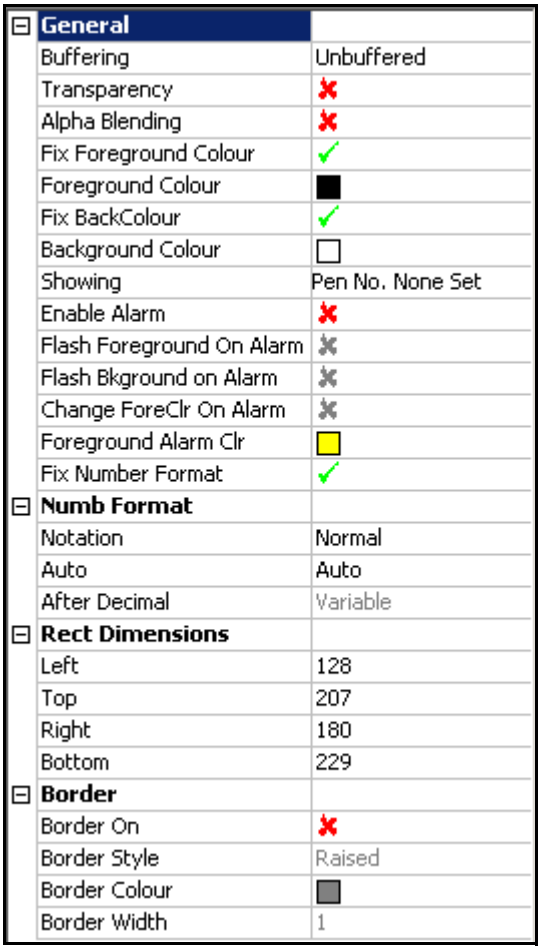


Dynamic

The Bar Style called Dynamic consists of three colours: Red, Amber and Green in one bar object. Unlike the Traffic light, which will show all three colours on the active part of the bar at the same time, the Dynamic style will change the whole bar to just one colour. **Screen Designer** only needs to know the two break points: Dynamic Breakpoint Green, where the whole bar changes from green to amber and Dynamic Breakpoint Amber, where the whole bar changes from amber to red.

Digital Object Properties

Table 4.2 : Example of a Digital Object properties window in the Screen tab

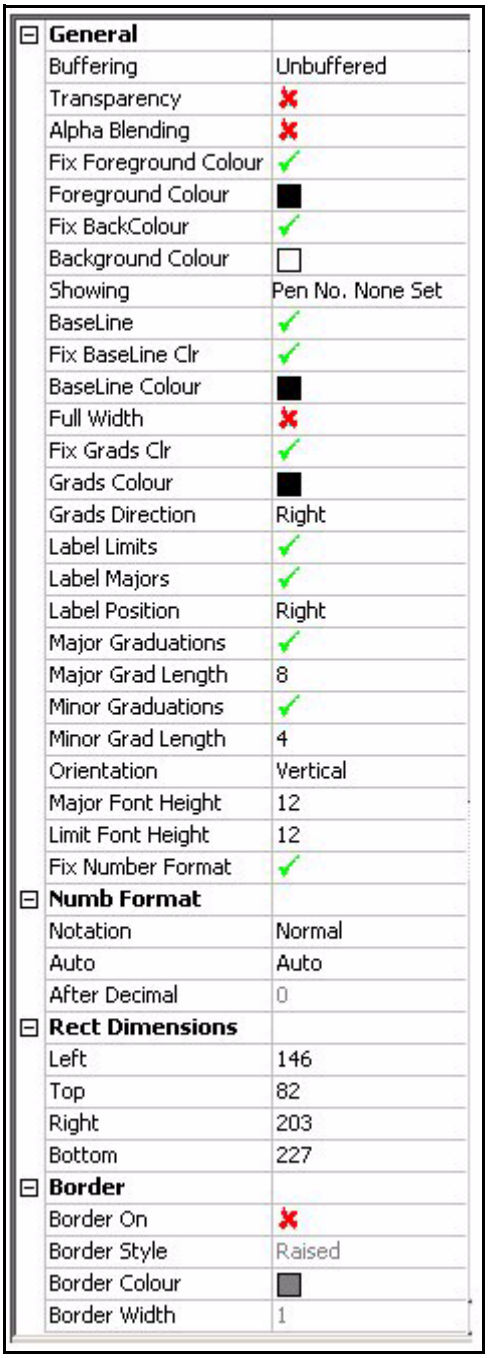


General	
Buffering	Unbuffered
Transparency	✘
Alpha Blending	✘
Fix Foreground Colour	✓
Foreground Colour	■
Fix BackColour	✓
Background Colour	□
Showing	Pen No. None Set
Enable Alarm	✘
Flash Foreground On Alarm	✘
Flash Bkground on Alarm	✘
Change ForeClr On Alarm	✘
Foreground Alarm Clr	□
Fix Number Format	✓
Numb Format	
Notation	Normal
Auto	Auto
After Decimal	Variable
Rect Dimensions	
Left	128
Top	207
Right	180
Bottom	229
Border	
Border On	✘
Border Style	Raised
Border Colour	■
Border Width	1

General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the active part of the object
Foreground Colour - Set foreground colour using colour palette
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Set up channel as - Data from Pen, Alarm for Pen or Input Channel
Enable Alarm - Enables any alarm features for the digital
Flash Foreground on Alarm - Foreground (number) will flash in alarm
Flash Bkground on Alarm - Background will flash when in alarm
Change ForeClr on Alarm - Colour of numbers will change in alarm
Foreground Alarm Clr - Set foreground (number) colour when in alarm
Fix Number Format - Tick to activate Numb Format options
Numb Format
Notation - Toggle between Scientific or Normal number format.
Auto - Toggle Between Auto and User Defined. Auto is set to 2 decimal places, User Defined allows one or more decimal places
After Decimal - Enter the number of decimal places.
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels

Scale Object Properties

Table 4.3 : Example of a Scale Object properties window in the Screen tab

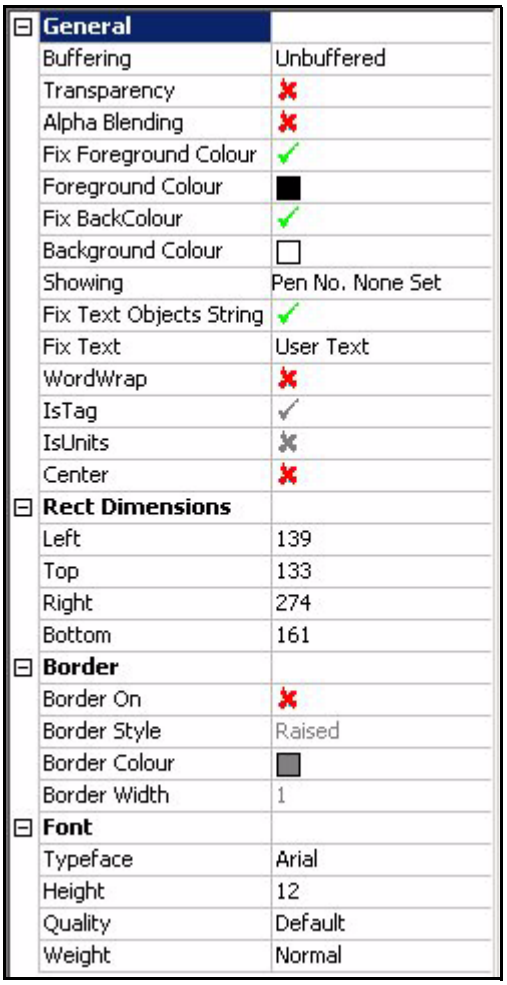


General	
Buffering	Unbuffered
Transparency	✘
Alpha Blending	✘
Fix Foreground Colour	✓
Foreground Colour	■
Fix BackColour	✓
Background Colour	□
Showing	Pen No. None Set
BaseLine	✓
Fix BaseLine Clr	✓
BaseLine Colour	■
Full Width	✘
Fix Grads Clr	✓
Grads Colour	■
Grads Direction	Right
Label Limits	✓
Label Majors	✓
Label Position	Right
Major Graduations	✓
Major Grad Length	8
Minor Graduations	✓
Minor Grad Length	4
Orientation	Vertical
Major Font Height	12
Limit Font Height	12
Fix Number Format	✓
Numb Format	
Notation	Normal
Auto	Auto
After Decimal	0
Rect Dimensions	
Left	146
Top	82
Right	203
Bottom	227
Border	
Border On	✘
Border Style	Raised
Border Colour	■
Border Width	1

General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the scale numbers
Foreground Colour - Set foreground colour using colour palette
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Set up channel as Data from Pen, Alarm for Pen or Input Channel
BaseLine - Switch on or off. The main line the graduations line up against
Fix BaseLine Clr - Fix the colour of the BaseLine
BaseLine Colour - Colour palette for BaseLine colour
Full Width - All graduations become the full width of the object
Fix Grads Clr - Fix the colour of all the graduations
Grads Colour - Colour palette for graduation colour
Grads Direction - Set the graduation direction to the Baseline
Label Limits - Switch the zero and span labels on or off
Label Majors - Switch on or off the labels for the major graduations (not limits)
Label Position - Position all labels to the Baseline
Major Graduations - Switch Major graduations on or off
Major Grad Length - Enter the length in pixels of the Major graduations
Minor Graduations - Switch Minor graduations on or off
Minor Grad Length - Enter the length in pixels of the Minor graduations
Orientation - Horizontal or Vertical object orientation
Major Font Height - Set text height for Major graduations
Limit Font Height - Set text height for zero and span labels
Fix Number Format - Set Notation and Auto or User Defined decimal places
Numb Format
Notation - Toggle between Scientific or Normal number format.
Auto - Toggle Between Auto and User Defined.
After Decimal - Select and enter the number of decimal places.
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels

Text Object Properties

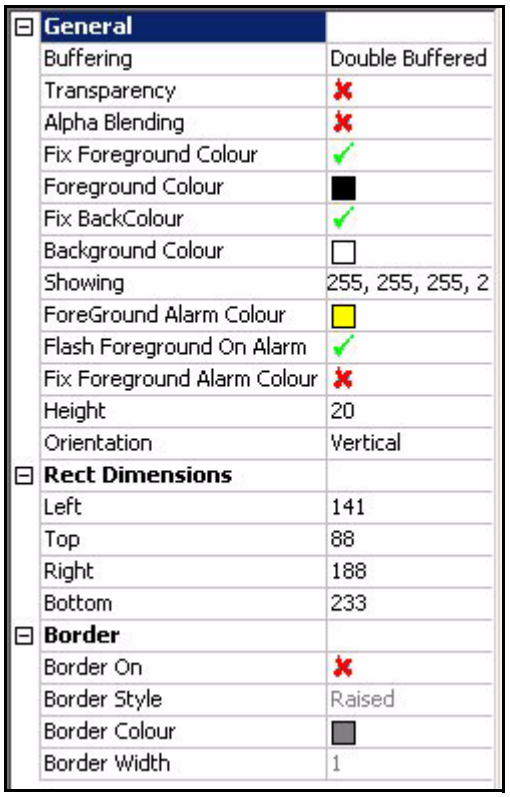
Table 4.4 : Example of a Text Object properties window in the Screen tab



General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the object text
Foreground Colour - Set foreground colour using colour palette
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Set up channel as Data from Pen, Alarm for Pen or Input Channel
Fix Text Objects String - Tick to enter User Defined text
Fix Text - Enter User Defined text using the keyboard
WordWrap - Wraps Multi-line text to the next line within the object
IsTag - Text will read what is entered as a Tag
IsUnits - Text will read what is entered as Units
Center - Centralises the text in the object
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels
Font
Typeface - Select a font typeface from the drop down list
Height - Type in a font height. Applies when Word wrap is ticked
Quality - Choose from Default, Antialiased or Cleartype
Weight - Choose from Normal, Medium, Semi-bold, Bold

Pen Pointers Object Properties

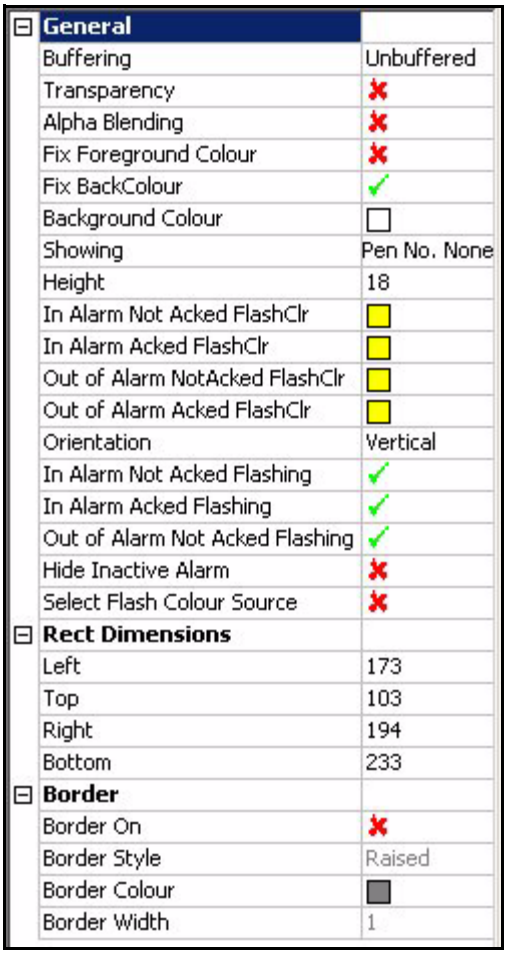
Table 4.5 : Example of a Pen Pointers Object properties window in the Screen tab



General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the pen pointer numbers
Foreground Colour - Set foreground colour using colour palette
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Enter the pens that the pen pointers object will show.
ForeGround Alarm Colour - Set foreground (pen pointer symbol) colour when in alarm
Flash Foreground On Alarm - Foreground (pen pointer symbol) will flash in alarm
Fix Foreground Alarm Colour - Tick to fix the alarm colour when in alarm
Height - height of the Pen Pointer. A height over 15 will show the Pen number in the Pen Pointer
Orientation - Horizontal or Vertical orientation
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels

Alarm Markers Object Properties

Table 4.6 : Example of an Alarm Markers Object properties window in the Screen tab

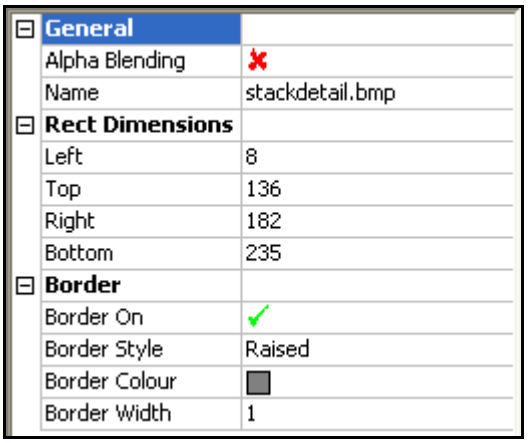


General	
Buffering	Unbuffered
Transparency	✗
Alpha Blending	✗
Fix Foreground Colour	✗
Fix BackColour	✓
Background Colour	
Showing	Pen No. None
Height	18
In Alarm Not Acked FlashClr	
In Alarm Acked FlashClr	
Out of Alarm NotAcked FlashClr	
Out of Alarm Acked FlashClr	
Orientation	Vertical
In Alarm Not Acked Flashing	✓
In Alarm Acked Flashing	✓
Out of Alarm Not Acked Flashing	✓
Hide Inactive Alarm	✗
Select Flash Colour Source	✗
Rect Dimensions	
Left	173
Top	103
Right	194
Bottom	233
Border	
Border On	✗
Border Style	Raised
Border Colour	
Border Width	1

General
Buffering - redraws off line to reduce screen flicker
Transparency - inactive part of the object becomes transparent
Alpha Blending - semi transparent state for overlaying objects
Fix Foreground Colour - Tick to fix colour for the active part of the object
Fix BackColour - Tick to fix colour for the background of the object
Background Colour - Colour palette for the background of the object
Showing - Set up channel as data from a single Alarm for Pen
Height - Height of the Alarm Marker triangle. A height over 15 will show the alarm number in the alarm marker
In Alarm Not Acked Flash Clr - Colour palette for non acknowledged alarm
In Alarm Acked Flash Clr - Colour palette for acknowledged alarm
Out of Alarm Not Acked Flash Clr - Colour palette for flash out of alarm that is not acknowledged
Out of Alarm Acked Flashing Clr - Colur palette for flash out of alarm that is acknowledged
Orientation - Horizontal or Vertical orientation
In Alarm Not Acked Flashing - Tick to flash alarm that is not acknowledged
In Alarm Acked Flashing - Tick to flash alarm that is acknowledged
Out of Alarm Not Acked Flashing - flash out of alarm that is not acknowledged
Hide Inactive Alarm - If ticked, alarms which have been acknowledged and which go out of alarm will have their alarm marker hidden.
Select Flash Colour Source - If ticked, allows you to specify the colours to be used for certain flashing conditions (see the flashing colour properties above). Otherwise, default flashing colours will be used.
Rect Dimensions
Left - position of the left edge of the object on the template
Top - position of the top edge of the object on the template
Right - position of the right edge of the object on the template
Bottom - position of the bottom edge of the object on the template
Border
Border On - turns the border on around the object
Border Style - Raised, Flat or Inset
Border Colour - colour palette for the object border
Border Width - enter border width, up to 15 pixels

Bitmap Object Properties

Table 4.7 : Example of a Bitmap Object properties window in the Screen tab

	**General**
	Alpha Blending - semi transparent state for overlaying objects
	Name - Name of bitmap selected
	Rect Dimensions
	Left - position of the left edge of the object on the template
	Top - position of the top edge of the object on the template
	Right - position of the right edge of the object on the template
	Bottom - position of the bottom edge of the object on the template
	Border
	Border On - turns the border on around the object
	Border Style - Raised, Flat or Inset
	Border Colour - colour palette for the object border
	Border Width - enter border width, up to 15 pixels

Design Rules

CAUTION

IMPORTANT NOTICE FOR TEMPLATES AND SCREENS

Any changes to a template will affect all screens which use the template. Also be aware that any design changes made in a screen will affect all of the other screens using that template and will change the template itself.

This **CAUTION** symbol may indicates a potentially hazardous situation, which, if not avoided, **may result in property damage.**

CAUTION

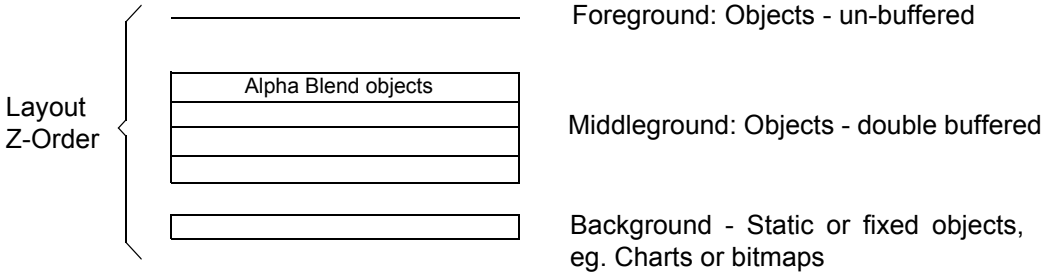
SCREEN DESIGNER FOR SAFETY INDICATION

When adding charts on custom screens whenever a pen value could be relied on for safety, a chart must be accompanied by one of the other indicators - pen pointer, bar or DPM. This is to meet the safety standard's requirements to provide out-of-range indication.

This **CAUTION** symbol may indicates a potentially hazardous situation, which, if not avoided, **may result in property damage.**

Layers within a Template

Figure 4.1 Template Layers side view



When an object is placed onto a widget it automatically displays in the foreground “unbuffered”. If two objects overlap, the buffering flag must be set in the Properties window. By setting the buffering flag, the overlapping objects move from the foreground to a middleground. This enables **Screen Designer** to process the overlapping data more efficiently and reduce redraw time and any flicker effect on the screen. This allows the non-overlapping objects to stay in the foreground, un-buffered, as they do not require as much processing. For the Z-order of overlapping objects see *“Object Z - Order” on page 53.*

For example, a Scale or Pen Pointer may be required to be placed on top of the chart object to save space. This is known as overlapping.

There may be many overlapping objects on a widget (eg. a scale may have a bar, pen pointers and alarm markers on top of it). If this is the case then it would be advisable to link the objects together so if they get resized or moved, they all maintain their zero and span position in relation to each other. Linking objects together attaches them in either a horizontal (X-axis) or vertical (Y-axis) orientation only. Objects do not have to be overlapping to be linked together. *See “Linking Objects” on page 56.*

Alpha Blending

As explained above, when two objects are overlapping and double-buffered, they will reside in the middle layer. If one of those is Alpha blended, it will be at the top of the middle layer. All Alpha blend objects automatically are double buffered. See *Figure 4.1, “Template Layers side view,” on page 53.*

Object Z - Order

The Z-order determines the sequence in which overlapping objects are displayed on the widget. Again, using the same example of a Scale with a bar, pen pointers and alarm markers on top of it, the user can put these overlapping objects in a sequence order.

The foreground only has one layer and does not have overlapping objects so is not concerned with the Z-order of objects.

The background may have one or two overlapping objects, such as two bitmaps, so minimal Z-order needs to be defined. A bitmap on top of a chart would not be recommended.

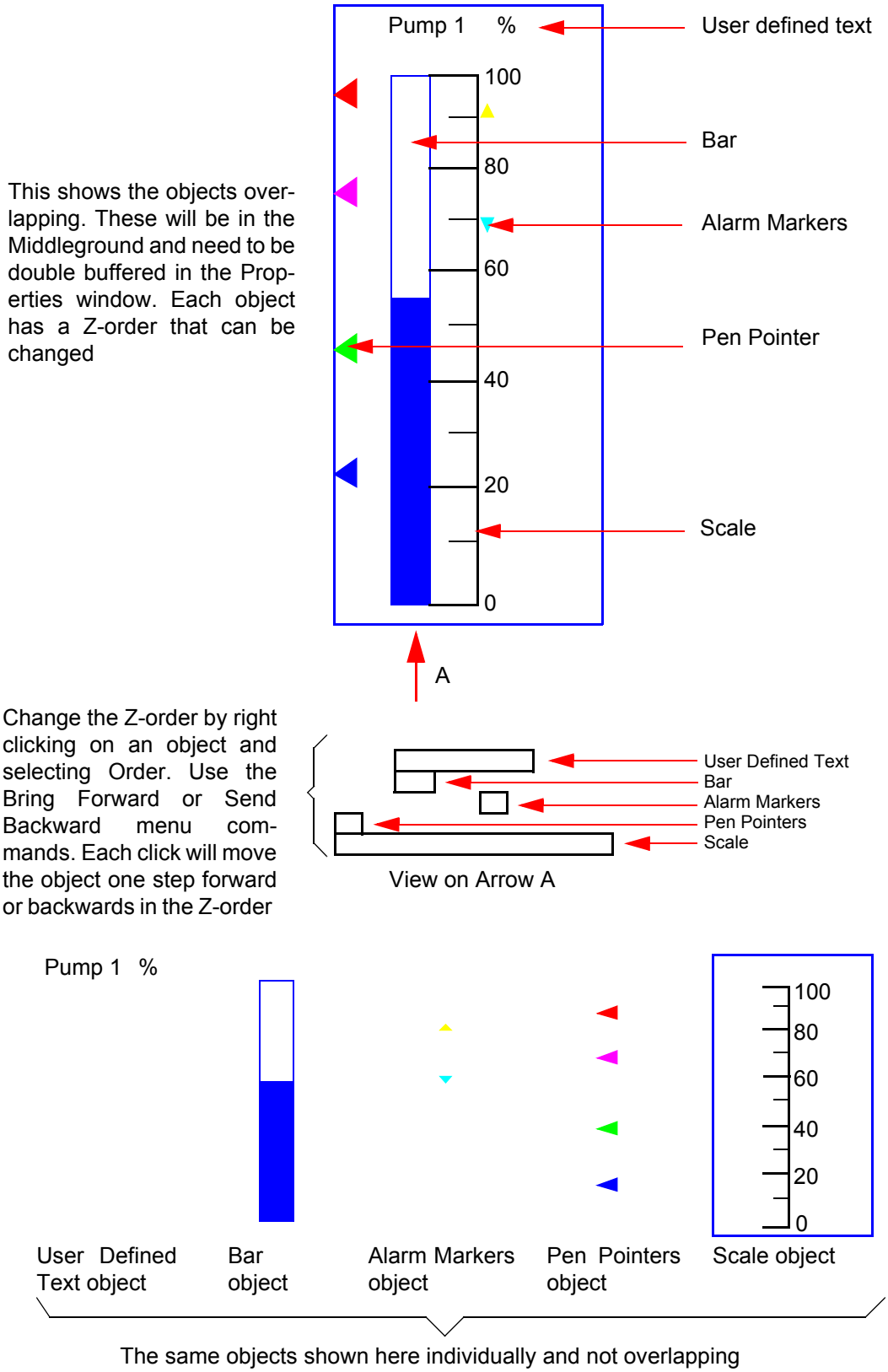
It is the middleground where most of the overlapping objects will be that the Z-order comes into use.

The order of how the objects overlap can be changed by right-clicking on the object and selecting Order; this is known as the Z-Order.

- Bring to Front: - moves an object to the top of the Z-order
- Send to Back - moves an object to the bottom of the Z-order
- Bring Forward: - moves an object one step higher in the Z-order
- Send Backward: - moves an object one step lower in the Z-order

Bring to Front and Send to Back moves the object within its layer eg.Middleground.

Figure 4.2 Example of Overlapping Objects Z-order in the Middleground



Linking Objects

Certain objects can be linked together so that they are locked at the same size, in one orientation, and will resize or move together. For example, a Bar and a Scale can be linked as long as they are in the same orientation as each other. The bar and the scale can be apart, side by side or on top of each other. The linking will line up the top and bottom graduations of the scale with the top and bottom limits of the bar. The objects are linked only in the orientation at which they are set. Only objects within the same widget can be linked together; you cannot link objects across widgets.

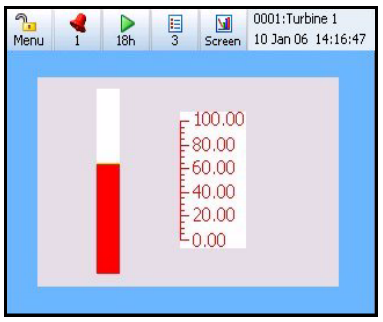
In the bar and scale example in *Figure 4.3 on page 56*, the two objects are linked only in the vertical plane. Resizing or moving these objects horizontally will not affect their link positions but resizing or moving them vertically will affect their link positions.

Link button

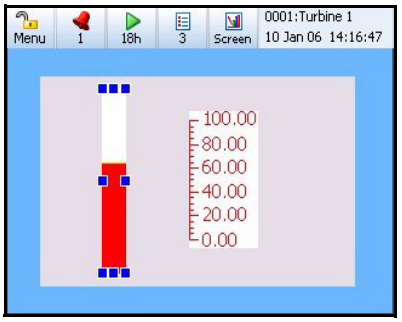
Unlink button

Select the first object, click the “Link Object” button in the template tool bar and then select the object you wish to link to. To unlink a linked object, select the linked object and click on the Unlink Object button from the template toolbar.

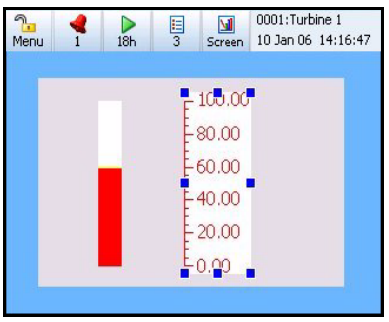
Figure 4.3 Linking Objects



A bar and scale object placed on the template.



Select the first object, click the Link Object button in the template tool bar and then select the object you wish to link to.



To unlink a linked object, select the linked object and click on the Unlink Object button from the template toolbar.

Objects that can be linked are: Bar, Scale, Chart, Pen Pointers and Alarm Markers (any object that has a zero and span position). Objects that are already linked can be linked to other objects (eg. a Scale is linked to an Alarm Markers object can then be linked to a bar).

When Alarm Markers are linked to a Scale, the Alarm Markers will position themselves at the correct level for where the alarm is set.

Properties Precedence

Colour

A colour picker is available for those properties that have colour changes available. Certain properties will have their colour properties “Fixed” eg. Fix Foreground Colour, Fix Background Colour.

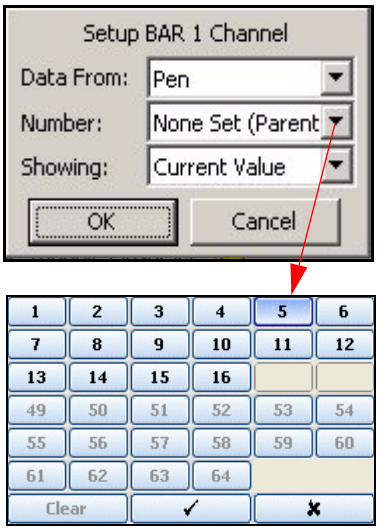
A manual change to the pen colour will over-write a fixed pen colour.

Configuring a Screen

Channel Mapping Widgets

Channel configuration can be done per widget or per object (i.e., either in the widget's properties window or in the object's properties window). Configure the widget if all the objects on the widget are to be mapped to the same channel. Select the widget and go to the “Channels” section in the properties window. Each object contained in the selected widget will appear in the channels section of the properties window. Each object in the widget can be assigned to the same or different Pen as a widget, Alarm for Pen or Input Channel.

For widgets and objects the setup box looks the same.



Configure

- Data from: Pen - set the pen number what the object is going to be showing: Current Value, Minimum value, Maximum value, Average pen reading or Total.Data from: Alarm for Pen - set the pen number and the alarm number(s)

- Data from: Input Channel - set the channel number and what the object is going to be showing: Analogue, Digital, Hi Pulse or Lo Pulse

- Number: of the Pen, Alarm for Pen or Input Channel

- Showing: For Pen - Current Value, Minimum, Maximum, Average or Total value.
For Alarm for Pen - List of available Alarms
For Input Channel - Analogue, Digital, Hi Pulse or Lo Pulse.

Screen configuration is assigning each object and/or widget to a channel/pen. Select an object or widget and go to the properties window.

Channel Mapping Objects

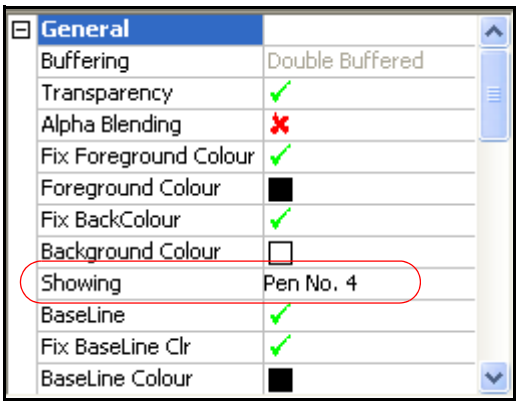
Channel mapping for an object is set up either in the properties window of the object itself (look for the property called "Showing") or in the properties window of the widget which contains the object (look for the object in the "Channels" section)..This will display which channel that object is currently assigned to, or where the data is coming from eg. Pen No.1.

To change channel mapping for a Scale, Bar, Digital or Text object, select the object and click in the box to the right of the “Showing” item in the properties window and select either Pen, Alarm for Pen or Input Channel. If a Pen or Alarm for Pen is required, select either the Pen number or the Parent Pen. *See “Parent Pens” on page 58.*

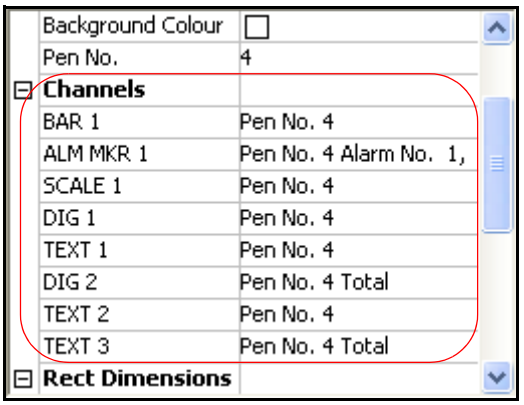
If the object is an Alarm Markers object the data will always be from “Alarm for Pen”. Select the Pen number and which alarm number(s) will be showing.

Charts and Pen Pointers just need to be mapped to one or more pens.

Figure 4.4 Properties window - Pen/Channel mapping



Object pen/channel mapping



Widget pen/channel mapping

Parent Pens

Does not apply to charts or pen pointers as they normally have more than one pen displayed. The parent channel is the initial channel to be configured on a widget. All objects added to a widget (except charts and pen pointers) automatically default to using the parent channel. The parent itself allows the user to quickly make all of its objects update to use the pen number indicated by the parent. To configure the parent pen of a widget, go to "Pen No." in the properties window for the widget. To use the parent pen of a widget, go to "Channels" in the properties window for the widget or go to "Showing" in the properties window of an object.

Animation

Before Loading your new layout onto a Recorder, you can use the Animation feature in **Screen Designer** to simulate the layout on the Recorder’s screen.

When your layout is complete, select the **Go!** button from the Main Toolbar to start the simulation tool. This feature can also be activated from the File menu (select Animate from the list).

If any of the pens appear in grey, this means the Demo traces in the setup being used have not been activated. In the simulator go to *Menu* > *Configure* > *Setup* > *Edit* > *General* > *Factory* > *Demo* Traces and change the Demo Traces to “Sim. if board not fitted”. By default demo traces will be active and all pens will be displayed in their default or assigned colours.

Saving Templates and Layouts

Saving a Template

Save Template

A template can be saved on its own. The template can then be loaded onto the recorder via removable media, such as Compact Flash card (for **X Series**), SD card (for **GR Series**), USB key or a Network Share folder (NAS) if set up, see *"Network Share Path (NAS)" on page 59*. Screens can then be created by adding the pen/channel configuration on the recorder that use that template.. *See "Loading a Template into a Recorder" on page 59.*

To save a template, go to the Save Template icon in the Design window toolbar.

Network Share Path (NAS)

This can be used for loading and saving layouts (.lay) and/or setup files (.set), saving (exporting) reports, any messages (Diagnostic, system etc), loading sound files from this network share to recorder. This can also be used to print to file and this file can be saved to this network shared folder.

Note. The Network Share folder is not recommended for use with scheduled exports and should not be used for firmware upgrades

Saving Layouts

Layouts consist of one or more templates and zero or more screens, which have the pen/channel configuration setup in it. The layout can be loaded onto the recorder via removable media, such as Compact Flash (for **X Series**), SD card (for **GR Series**), USB key or Network Share folder (NAS). *See "Loading a Template into a Recorder" on page 59.*

To save a layout go to the Save icon in the main toolbar.

Loading a Template into a Recorder

Loading a Template

The Custom Screens firmware option has to be active in a recorder in order to accept templates from **Screen Designer**.

Note: Non-Process screens used in **GR Series** recorders will not load in **Screen Designer**, only Standard Process and Custom screens can be loaded.

One or more templates can be loaded into a Recorder one at a time, screens added using them and displayed. Save the .tpl file as described in *"Saving a Template" on page 59.*

Fit the removable media into the recorder and go to Main Menu > Configure > Layout and select Load. The Device selection menu will appear for you to select USB key, Compact Flas or Network Share folder (NAS) and select the template file. Press the Load button after you have selected the desired template file to load.

To add a screen based on a template that you loaded, go to Main Menu > Configure > Layout > Edit and select Add Screen. A new standard screen will be added, which you will need to change. Go to the template Type option and select it and your template will be listed here. Select your template and your new screen will use that template. Re-name the screen as required. No pen/channel configuration is held in a template file.

To display the new screen go to the Screen button in the Main menu bar at the top of any process screen and select the Next button to scroll through the screens. Or select the List button to show the list of screens in the recorder and select your new screen.

Loading a Layout into a Recorder

Loading a Layout

The Custom Screens firmware option has to be active in a recorder in order to accept layouts from **Screen Designer**.

Note: Non-Process screens used in **GR Series** recorders will not load in **Screen Designer**, only Standard Process and Custom screens can be loaded.

A single layout can be loaded into a Recorder and displayed. Save the .lay file as described in *"Saving Layouts" on page 59.*

Fit the removable media into the recorder and go to Main Menu > Configure > Layout and select Load. The Device selection menu will appear for you to select USB key, Compact Flas or Network Share folder (NAS) and select the layout file. Press the Load button after you have selected the desired layout file to load.

Go to Main Menu > Configure > Layout > Edit if you need to edit any of the recorder screens you just loaded from the new layout.

To display the new layout go to the Screen button in the Main menu bar at the top of any process screen and select the Next button to scroll through the screens. Or select the List button to show the list of screens in the recorder.

Pen/channel configuration can be changed in the recorder for layouts loaded from Screen Designer.

Loading a Setup from a Recorder into Screen Designer

A setup from the recorder can be saved onto a removable storage device such as a Compact Flash card (for **X Series**), SD card (for **GR Series**), USB key or into a Network Share folder (NAS). In the recorder go from the Main Menu to Configure > Setup > Save. Select the desired storage device and save the setup with a suitable file name. The file type extension is .set. Now to load the setup into **Screen Designer**, fit the CF card, USB key into your PC, or navigate to the Network Share folder (NAS), and select Load Setup from the File menu. The setup file will be loaded into **Screen Designer** to be used by all layout documents and template documents open in **Screen Designer** and be visible at the top of the File Browser window.

Loading a Setup File into Screen Designer

A Setup file can be imported from a recorder in order to display the actual user-entered pen information into **Screen Designer**. The pen information displayed will depend on what has been configured for the recorder, eg. pen tag and pen units. **Screen Designer** will use the recorder pen colours specified in the setup as the default pen colours. *See "Setup File" on page 23.*

Loading a Setup from the Trend Manager Pro software

Setups from **TrendManager Pro** software can be loaded into the **Screen Designer** software where layout changes can be made as required. No setup changes can be made in **Screen Designer**. Layouts from **Screen Designer** can be loaded into TMP where pen/channel configuration and pen assignments can be modified.

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Sales and Service
For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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